The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 626.—Vol. XVII. LONDON, SATURDAY, AUGUST 21, 1847. [Price 6d.

TO BE SOLD—COLLIERY ENGINES, MACHINERY, MINING MATERIALS, &c., in IRELAND, in the Queen's County, between Carlow and Athy, consisting of TWO STEAM-ENGINES, both recently in active work.

ONE CONDENSING, adapted both for pumping and winding, about 25-horse power, cylinder 24 inches diameter, 6-feet stroke, fly-wheel 18 feet diameter, cast metal beam and connecting-rod, double crank, spur-wheels and pinion, with two large quadrants, or bell cranks, with two boilers, one 36 feet long, 4½ feet diameter, with safety valve, the other 18 feet long, 5 feet diameter, &c.

ONE HIGH-PRESSURE ENGINE, of 16-horse power, for winding and pumping, cylinder 18 inches, 3-feet stroke, fly-wheel 15 feet diameter, cylindrical boiler 22 feet long, 5 feet diameter, with valves, &c.

PIT HEAD GEARING, &c.—consisting of pulley frame and engine-shaft shears, metal rope rolls, 200 yards of 4-inch flat-ropes, 2 capstans, 3 flat-rope pulleys, coal boxes, iron tramroads, 8 by 6-inch pulleys, large beam, scales, and weights, a whim, 10 feet diameter, a 3-inch force pump, with 3-inch pipes attached, large brass stop-cock, sundry timber and carpenters' tools, bellows, ladders, anvils, and smiths' tools, taps, dies, &c.; office furniture, a miner's compass, measuring chains, iron waggons, barrows, wire rope, pit chains, 9 and 10-inch pumps, iron cages, a lathe and strap, nail-rod iron, cog-wheels and pinions, fire blocks, and sundry useful colliery and mining implements.

Further particulars may be known, and the property may be seen, by application to Mr. Thomas Johnson, the manager, at the Rushes Colliery, in the Queen's County, situate between Athy and Castlecomer; to John Graham, the clerk of the works there; also of William Brophy, Esq., solicitor, 14, Talbot-street, Dublin, who will receive proposals for the purchase of all or any part of the property described; or application may be made to Joseph Hedley, Esq., C.E., for the same purpose, 29, Bucklersbury, London.

TO BE SOLD, BY PRIVATE CONTRACT, at GODOLPHIN MINES, ONE 24-inch STAMPING-ENGINE, 9 feet stroke, boiler, 11 tons.
ONE 18-inch WHIM-ENGINE, 4 feet stroke, boiler, 7 tons, and cage.
SIX TUBULAR BOILERS, 11 tons each.
A large IRON BALANCE-BOB, 12 tons.
Application to be made to Capt. R. Williams, on the mines.
Dated Godolphin Mines, Helston, Cornwall, August 9, 1847. 2

FOR SALE, a 70-inch cylinder ENGINE, without boilers.—For price, and further particulars, please apply to Samuel Gross, Esq., engineer, Wall, Gwinear, Camborne. 3

FOR SALE, AT TRETOIL MINE, LANIVET, NEAR BODMIN, CORNWALL.—1 66-inch cylinder STEAM PUMPING ENGINE, with two boilers, about 20 tons, complete—one other boiler, about 12 tons; 1 21-inch cylinder STEAM PUMPING ENGINE; 44 17-inch PUMPS; 2 17-inch plunger-poles; 2 18-inch cases for ditto, with stuffing-boxes and windbores; H and door-pieces, several pumps of 11, 11½, 9½, 8, and 6 inches, with windbores; 13-inch plunger-pole and case, 6-inch ditto, H-piece and door-piece, &c.; 8-inch plunger-pole, balance-bobs, capstans and shears; 130 fathoms 12-inch capstan-rope, whim-ropes, main-rods, strapping-plates, stapice and glands, pulleys, railroad iron, truss waggons, and numerous articles, well worthy of attention—much of the pitwork and materials being nearly new, and in good condition.

Apply to Mr. Henry Thomas, 8, George-yard, Lombard-street, London; Mr. George Geach, Bodmin; or to Capt. Henry Williams, at the mine.—Dated July 15, 1847. 4

FOR SALE, AT TRENOW CONSOLS MINE, NEAR MARAZION, in the county of Cornwall, an 85-inch cylinder STEAM PUMPING-ENGINE, 10-feet stroke, equal beam, with three boilers, of 36½ tons; 6 fathoms of 17-inch, 35 fathoms of 16-inch, and 10 fathoms of 9-inch PUMPS; 4 15-inch, 1 8-inch, and 1 9-inch windbores; 2 15-inch and 1 13-inch working-barrels; 4 15-inch clack seat-pieces; 1 15-inch and 1 14-inch H and top door-pieces; 1 12½-inch, 1 14-inch, and 2 15-inch plunger-poles, with suitable stuffing-boxes and glands; 2 capstans and 1 shears; 1 12-inch and 1 9-inch capstan rope, each about 100 fathoms long; 1 balance and 1 angle-bob; 80 fathoms of from 7 to 13-inch main-rods; strapping plates, bolts, and burrs; flange bolts, staples, and glands; horse-whims, whim chain, and kibbles, with numerous articles, well worthy the attention of mine adventurers and agents.

Application to be made to the agents at the mine; or to Mr. Henry Thomas, Mining Offices, 8, George-yard, Lombard-street, London.—Dated July 15, 1847. 14

TO BE LET, and entered upon immediately, a valuable SEAM of STEAM COAL, of about 200 acres, more or less, situated at OLD SHILDON, in the county of DURHAM. The shaft is already sunk, and a private line of railway connects it with the Stockton and Darlington and Clarence Railways, below the Brusselton incline: there is also a considerable thickness of FIRE CLAY, containing great quantities of IRONSTONE intermixed with it—a sample of which can be seen on the bank—and which, being let with the coal, might together be worked with very great advantage, and is well worthy of the attention of those wishing to embark in such a speculation. CLAY also, for making bricks and draining tiles, is in great abundance, and can also be let at the same time.—Apply to Mr. John Robson, of Bedworth House; or to Mr. Wm. Clemenson, of Old Shildon.—August, 1847. 5

TO BE LET, the PARK-HILL MINES, DEAN FOREST, GLOUCESTERSHIRE—containing ONE MILLION TONS OF COAL, and ONE MILLION TONS of rich IRON ORE, which, being calcareous, smelts well with argillaceous ironstone, and may be delivered in large quantities to the Staffordshire, Shropshire, and Welsh iron-works, at a price far below the cost of local ironstones. The mines are drainable by level, and can be opened at a trifling expense; and, were blast-furnaces erected, their produce might be smelted on the spot into excellent iron.—Apply (post-paid) to Henry H. Fryer, Esq., solicitor, Coleford, Gloucestershire. 7

DUDDINGSTONE AND BRUNSTAIN COAL-FIELDS, near EDINBURGH, TO BE LET, as detailed in former advertisements. The SEAMS OF COAL are numerous, and BLACKBAND IRONSTONE may be expected in the lands, similar to that which has been recently discovered at Gilmerton, Dryden, and Greenlaw, in the same range of coal strata. Excellent LIMESTONE is known in the lands.—The near vicinity to the City and Portobello, besides other markets now opened by railway, and also the harbours of Leith and Fisherrow, with all which the existing railway, passing through the estate, connects, renders it now very eligible for colliery operations. There are two steam-engines, and other colliery machinery, at the pits, one of which is nearly sunk to the Jewel Coal.

Offers for a lease to be addressed to Mr. Geddes, 49, Albany-street, Edinburgh. July 29, 1847. 6

VALENTIA SLAB COMPANY.
INCORPORATED BY ROYAL CHARTER.
Capital £100,000, in shares of £10 each.

The VALENTIA QUARRIES are well known for the SUPERIOR QUALITY of their SLATE, and its peculiar adaptation for sawing into slabs. Valentia Slabs, indeed, have long been an established article of commerce in the London market; and there is a regular and rapidly-increasing demand for them by builders, contractors, &c., for various purposes—as railway platforms, the floors of factories, warehouses, granaries, stores, maltings, &c., and the roofs, halls, and staircases, of public and other buildings; they are also in great request in the colonies for coffee drying grounds and sugar manufactories.

The parties associated in the undertaking have just obtained from her Majesty's Government a Royal Charter of Incorporation, and propose to increase the capital and extend the works. The charter has been granted on most advantageous terms, and the responsibility of shareholders is limited by it to the amount of their subscriptions. The larger portion of the share capital has been already subscribed—the improvements are in forward progress—and the works will be shortly in extensive operation. A net annual profit of full 10 per cent., and increasing to 20 per cent. with the increase of the scale of working, may be safely reckoned upon.

The deposit will be £1 per share, and there will be calls of £1 each in October and January; and, probably two of £1 each, during the next year, after which no further call is anticipated.

Prospectuses, with full details, to be had at the offices of Messrs. Palmer and Nettleship, No. 4, Trafalgar-square, London, to whom applications for the remaining shares may be addressed.

BRUNTON'S PATENT ORE-DRESSING FRAME.— These FRAMES, for DRESSING TIN, COPPER, and OTHER MINERALS, having been in use, and given satisfaction, on several mines, during the last two years, the PATENTEE begs to call the attention of all Adventurers and Mine Agents to the great advantages, both as regards economy of labour and the great increase of mineral obtained by their adoption. The following gentlemen can certify as to their utility:—Thos. Bolitho and Sons; P. N. Johnson, Esq.; Capt. Jos. Vivian, Cook's Kitchen Mine; Capt. R. Kernick, St. Ives Consols; Capt. R. Edwards, Wheal Franco; Capt. W. Teague, Wheal Grey; Capt. James Mitners, and Capt. Matthew Rogers, Carn Brea Mines. 10

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 11

SMITH AND ENGLISH (late ANDREW SMITH),
PRINCES-STREET, LEICESTER-SQUARE, LONDON,
ENGINEERS, MACHINISTS, IRON AND BRASS FOUNDERS, &c.,
PATENTEES and MANUFACTURERS of Improved Steam-engines, Rapid Steam Generators, Railway Wheels, Rails and Chairs, Propellers for Canal and River Navigation, ROPE-MAKING, FLAX-DRESSING, AND OTHER MACHINERY,
Raising and Lowering Machines, Wharf, Warehouse, and Truck Cranes, Tramway, Traversing and Stationary Purchase Crabs, Tackle, &c.—Also, Steam-engines and Boilers, of various constructions; Bone, Sugar, and Mill Work, and Machinery of every description manufactured and repaired; Saw-mills, Breweries, and Factories attended.
Planing, Boring, Turning, Screw-cutting, &c. 12

STRONG MIXING PIG-IRON.—The YSTALYFERA IRON COMPANY beg to solicit ORDERS for their ANTHRACITE PIG-IRON. This iron mixes well with Scotch pig—imparting to it strength and elasticity, and receiving from it a portion of its softness and fluidity. No. 3 Pig is recommended for mixing with soft iron—Nos. 1 and 2, for machinery castings, requiring great soundness and strength. At this period, when cast-iron is so much employed in the construction of bridges and other buildings, requiring all the strength and elasticity which the best mixture of metal will afford, it may be interesting to call attention to the characteristics of ANTHRACITE PIG-IRON, as REPORTED on by that great practical authority, the late DAVID MUSHET, Esq., M.I.C.E.:—

"It greatly exceeds, in *strength*, in *defective* powers, and capacity to resist *impact*, any iron at this time manufactured in the United Kingdom."

"It now only remains for me to mention a property peculiar to this iron, which was noticed at the time I made the trial experiments, four years ago, but which has been more fully developed in those more recently made. The property referred to is one of *great springiness*, or *elasticity*, which communicates a tendency to the bar, in deflecting and breaking, to resume its rectangular form. Bars that had obtained a permanent set of 2-10ths, when afterwards broken, presented but a slight deviation from a right line; and in no case, did the curvature exceed one-fourth of a tenth."

"It was also remarked, that most of the fractures, in breaking, presented a *regularity of grain* throughout, resembling the structure of *unhardened steel.*"

Address THE YSTALYFERA IRON COMPANY,
Dated June 22, 1847. *Near NEATH, SOUTH WALES.* 13

HOT-BLAST WITHOUT COAL, LABOUR, OR REPAIRS.
DIXON AND BUDD'S PATENTS.
Apply for particulars, or to inspect the process in operation on six blast-furnaces, to J. Palmer Budd, Esq., Ystalyfera Iron-Works, near Neath.
Dated June 22, 1847. 14

ADCOCK'S PATENT SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION at LLANHIDDEL, at pits belonging to R. J. Blewitt, Esq., M.P., Llantarnam Abbey, near Newport, Monmouthshire, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his offices, 137, Strand, London, where pamphlets, descriptive of the invention, may be had; at the office of the *Mining Journal*, 26, Fleet-street; and through any respectable bookseller—price 6d. 15

BRETT AND LITTLE'S TELEGRAPH.—The Patentees beg to inform all RAILWAY COMPANIES, that, having COMPLETED their PATENT ARRANGEMENTS, they are now enabled to demonstrate the principle of their ELECTRO-TELEGRAPHIC CONVERSER, 16
which is allowed, by all who have seen it, to be the most PERFECT TELEGRAPH hitherto invented.—Messrs. BRETT & LITTLE are also prepared to TREAT for its ADOPTION, on the most liberal and economical terms.

The TELEGRAPH may BE SEEN in ACTUAL OPERATION, through *seventeen instruments*, and coils of wire equal to *one thousand miles*, by tickets, to be had in reply to an application by post.—Furnival's Inn, London.

VIADUCTS AND OTHER RAILWAY WORK.—The at- tention of Railway Engineers, Architects, and Contractors is particularly directed to the great advantages to be derived from the application of SEYSSEL ASPHALTE, as the *only impervious and permanent* covering for arches and roofs, and lining of reservoirs, gutters, &c. The arrangements of CLARIDGE'S PATENT ASPHALTE COMPANY enable it to execute works of any extent with the greatest promptitude. 17

In order to guard against the use of spurious materials, it is important that all applications for works to be executed be made direct to this company; and, as a further protection, it is suggested that Engineers, Architects, and Contractors, should require a CERTIFICATE from the company that the proper description of material has been used.

Information may be obtained as to all works which have been executed by the company since its establishment in 1838, which will prove that the failure of many works represented to have been done with the genuine material has resulted from the substitution of a spurious one.

I. FARRELL, Secretary,
Seyssel Asphalte Company, Stangate, London.

IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.
W. BROTHERTON AND CO.'S
PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS OF MACHINERY. 18

W. B. & CO. have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers, W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.
Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED PATENT ELASTIC METALLIC PISTONS. 19
The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is—

1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.

2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.

3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.

Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

FLEXIBLE HOSE-PIPES FOR LOCOMOTIVE ENGINES, RAILWAY CRANES, FIRE-ENGINES, GAS, &c.
PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND TUBING OF EVERY DESCRIPTION. 20
These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.

FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.

VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer, JAMES LYNE HANCOCK,
Goswell Mews, Goswell-road, London.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public. 21

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

IMPORTANT TO RAILWAY COMPANIES. 22
PATENT KAMPTULICON COMPANY, 18, CORNHILL.
This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.

By order of the board, P. G. GREVILLE, Secretary.

PATENT GALVANISED IRON AND WIRE ROPE WORKS, *MILLWALL, POPLAR.* 23
ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN,
J. MURDOCH (successor and late assistant to Mr. Hebert)
Informs INVENTORS and PATENTEES, that, at his OFFICE, they can obtain 24
REFERENCE TO A CLASSIFIED LIST OF PATENTS,
(THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.

SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.

FINISHED and WORKING DRAWINGS executed with accuracy and dispatch.

THE ENGINEER'S AND CONTRACTOR'S POCKET-BOOK, for 1847 and 1848, New Edition, is now just published, price 6s.
John Weale, 59, High Holborn. 25

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS. 26

MINING OFFICES, 1, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.
WATSON AND CUELL, MINE AGENTS.— N.B.—STATISTICAL INFORMATION furnished (on application) to SHAREHOLDERS in MINES in Cornwall, Devon, Scotland, Ireland, Wales, and Spain. 27

WILLIAM H. SMITH, MINING SHARE AGENT, 10, *WARNFORD-COURT, THROGMORTON-STREET, LONDON.* 28

MR. R. TREDINNICK, MINING AGENT AND DEALER IN EVERY DESCRIPTION OF SHARES.
THREE KING'S COURT, LOMBARD-STREET, LONDON. 29

THOMAS P. THOMAS, MINE AGENT, AND DEALER IN RAILWAY AND OTHER SHARES.
18, *THREADNEEDLE-STREET, LONDON.*
Mr. T. P. THOMAS is a SELLER of Gwinear Consols, at £21; West Wheal Providence, at £18—and is a BUYER of Trehanes, Herodsfoot, Herodscomb, North Pool, & East Pool. 30

JAMES LANE, MINING SHARE DEALER, 75, *OLD BROAD-STREET, LONDON.* 31

BRITISH MINING OFFICES, 41, MOORGATE-STREET, LONDON.—PROSPECTUSES may be had, and ORIGINAL SHARES ALLOTTED in the COPPER and SILVER-LEAD MINES connected with these offices, on application to the secretary, THOS. HENRY TAUNTON. 32

MONEY.—MESSRS. WINSTANLEY & CO., Sharebrokers, having at their command a very large SUM of MONEY for INVESTMENT, inform their friends and the public, they are prepared to make ADVANCES on the deposits of English or Foreign Railway or Mining Shares, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK at much less commission than usually charged.—6, Bank Chambers, City, opposite the Bank of England. 33

BANWEN IRON COMPANY.—Notice is hereby given, that the next ORDINARY GENERAL MEETING of the shareholders of this company will be HELD at their offices, 23, Threadneedle-street, London, on Monday, the 30th inst., at One o'clock precisely. By order, S. P. HARRIS, Secretary.
23, Threadneedle-street, August 18, 1847. 34

BAROSSA RANGE MINING COMPANY.—At a Special General Meeting of this company, held at 13, Bedford-row, London, on Tuesday, the 10th day of August, 1847,

The report of the directors was read and adopted, and resolutions were passed, authorising them to invest a limited sum in the acquisition of mineral lands, exempt from royalty, and to acquire other mineral lands on which experiments might be made in the first instance, with liberty to purchase afterwards.

And they were also authorised to make experiments for reducing the ore, by smelting, as they might deem advisable, in order to the economy of carriage and freight.

And a resolution was passed, for subdividing the shares into 6000, of £10 each, instead of 600, and for a call (within one month) of £5 on each original share.

And for such alterations in the constitution of the company as were consequently necessary. 35

LLANCYNFELIN MINES COMPANY.—At a Meeting of adventurers, held at the offices, 44, Finsbury-square, on Friday, the 13th inst.,

It was resolved,—That two several special general meetings of the shareholders of this company be called forthwith, for the 3d of Sept. next—the first of such meetings being for the purpose of dissolving, or otherwise, this company; and the second thereof, for the purpose of confirming, or otherwise, the resolution to be agreed to at such first meeting.

BENJAMIN SMART FOWLER, Chairman. 36

EAST COOMBE SILVER AND LEAD MINING COMPANY—In 4096 shares, at One Guinea per share.
CONDUCTED ON THE COST-BOOK SYSTEM.
BANKERS—The National Provincial Bank of England, Barnstaple.
SECRETARY—Mr. George Chowen. 37

The mines possessed by the company extend upwards of 800 fathoms on the run of the lodes, and about 200 fathoms in a cross direction, situate in the parish of Swymbridge, near Barnstable, being held under a lease of 21 years, at 1-15th dues. The lodes are parallel with those of the Combmartin Mines, and in every respect similar in their component parts, matrix as well as country (which latter is a kindly killas), and may be worked at an easy cost. The operations of the present company have been confined for the past two years to clearing up the old workings, sinking engine-shaft, extending levels, &c.; but it being deemed essentially necessary to erect a steam-engine, with the view of putting the mine to a greater depth, as also proving the north lode, it has been determined to extend the number of shares to 4096, with a payment of One Guinea per share, a considerable proportion of which will be taken by the present proprietors. It may be observed, that the mines may be worked for the next six or eight months without the aid of steam-power, there being a good water-wheel erected, but which can only be partially applied, from the top water falling off; during which time the north lode (the most promising one in the sett) can be intersected at the 10 and 20 fathom levels, and driven on at those points. The adventurers have lately secured a valuable addition to the sett, which considerably enhances the value of the property.

In working the mines, it is intended to adhere strictly to the Cost-book System; a finance committee being appointed, who will have control over the funds of the company, and see to their proper application; such committee to be appointed at the first meeting of the adventurers, and remain in office two months, when they shall be [illegible] to furnish a cash account of receipts and expenditure, as also the assets and liabilities, precluding the possibility of any adventurer being rendered liable beyond the amount of his cost. The committee so appointed to be eligible to be re-elected, or others appointed in their stead, at any two-monthly meeting. The ore hitherto raised has been rich for silver, its value being £15 to £20 per ton. The mine is in a good working condition, with water-wheel, flat-rods, pumps, &c., the value of the [illegible] being estimated at £1300.

Parties who may take shares in the company, will [illegible] them free of any liabilities up to the present time.

The annexed report of Captain Williams, will convey general information as to the prospects which the mine presents.

REPORT.

I have inspected the East Coombe Mine, and beg to hand you my report. The mine is located in a stratum of rich blue killas. The lodes are parallel to those of the celebrated Combmartin Mine, and in similar strata of ground. A considerable quantity of ore appears to have been taken from the south lode. In the bottom of the 10 fathom level, a good branch of silver-lead ore is going down, and I have no doubt of your having a course of ore in this lode at the next level.

The north lode, however, in my opinion, is the most kindly one in the sett. The indications at the adit being of the most encouraging nature, I strongly recommend this lode being cut, with all possible dispatch, at the 10 and 20 fm. levels; and I confidently believe you will find it rich when intersected. The machinery is in first rate order, and well laid out. It is my firm conviction, that if a steam-engine were erected, and the working vigorously prosecuted, considerable returns might at once be made. J. WILLIAMS.

Applications for shares to be made to J. P. Gilbert, Esq., Manager, National Provincial Bank, Barnstaple; Mr. John Westacott, East Coombe Mining Office, Swymbridge; and the secretary, Mr. George Chowen, from whom prospectuses may be had.

BIRMINGHAM, WOLVERHAMPTON, AND DUDLEY RAILWAY.—Notice is hereby given, that the next ORDINARY MEETING of the shareholders of the BIRMINGHAM, WOLVERHAMPTON, AND DUDLEY RAILWAY will be HELD at Dee's Royal Hotel, in Temple-row, Birmingham, on Monday, the 30th day of August, 1847, at Twelve o'clock in the forenoon.

The transfer books of the company will be closed from the 19th day of August inst., until after the day of the meeting.

Proxy papers, in order to be available, must bear a stamp of 2s. 6d., and must be received by the secretary 48 hours, at least, before the time appointed for the meeting.

WILLIAM MATHEWS, Chairman.
JOHN W. KIRSHAW, Secretary.
34, Bennett's-hill, Birmingham, August 10, 1847. 38

BIRMINGHAM AND OXFORD JUNCTION RAILWAY. —Notice is hereby given, that the next ORDINARY MEETING of the shareholders of the Birmingham and Oxford Junction Railway will be HELD at Dee's Royal Hotel, in Temple-row, Birmingham, on Monday, the 30th day of August, 1847, at Three o'clock in the afternoon.

The transfer books of the company will be closed from and after the 19th day of August instant, until after the day of the meeting.

Proxy papers, in order to be available, must bear a stamp of 2s. 6d., and must be received by the secretary 48 hours, at least, before the time appointed for the meeting.

WILLIAM MATHEWS, Chairman.
JOHN W. KIRSHAW, Secretary.
34, Bennett's-hill, Birmingham, August 10, 1847. 39

CORNWALL RAILWAY—HALF-YEARLY ORDINARY MEETING.—Notice is hereby given, that the HALF-YEARLY ORDINARY MEETING of the shareholders in the CORNWALL RAILWAY COMPANY will be HELD in the Assembly Room, at Truro, on Thursday, the 26th inst., at noon precisely.

The transfer books will be closed on the 12th inst., and will not be reopened until the said half-yearly ordinary meeting.

J. T. TREFFRY, Chairman.
Cornwall Railway Office, Truro, August 5, 1847. W. H. BOND, Secretary. 40

IMPROVEMENTS IN THE VOLTAIC BATTERY.

ON A NEW VOLTAIC BATTERY, CHEAP IN ITS CONSTRUCTION AND USE, AND MORE POWERFUL THAN ANY BATTERY YET MADE; AND,

ON A CHEAP SUBSTITUTE FOR THE NITRIC ACID OF GROVE'S PLATINA BATTERY.

By the Rev. N. J. CALLAN,

Professor of Natural Philosophy in the Royal College, Maynooth.

Some time ago, whilst I was reflecting on the principle of action of Grove's and Bunsen's batteries, it occurred to me that lead might be substituted for the platina of the former, and the carbon of the latter. I put into the porous cell of a Grove's battery, a piece of lead about 1-16th of an inch thick, 2 in. broad, and 6 in. long. I found that the voltaic current produced by the lead excited by a mixture of concentrated nitric and sulphuric acid was very powerful. I afterwards compared the power of this leaden battery with that of a platina one of the same size, by sending through the helix of a galvanometer, at the same time, but in opposite directions, the currents produced by the two batteries; both batteries were charged with the same acids, the lead and platina were excited by concentrated nitric and sulphuric acid, and the zinc by dilute sulphuric acid. The current from the platina battery destroyed the deflection produced by the leaden one, and caused an opposite deflection, which indicated that the former current was about twice as strong as the latter—the two batteries were left working for about three hours and a half. At the end of that time the current from the lead was about twice and a half as powerful as the current from the platina—the quantity of lead dissolved during these three hours and a half was very small.

It struck me that, by diminishing the action of the acids on the lead, I might increase the power of the battery; I, therefore, covered a leaden plate with gold leaf, and coated another of the same size with chloride of gold, in the same way in which sheet silver is platinised for Smee's battery. These plates, and a platina one of the same size, were put successfully into the porous cell of a Grove's battery, and the voltaic current sent through the helix of our large electro-magnet, in which the iron bar is about 13 ft. long, and 2½ in. thick: the copper wire is about 500 ft. long, and 1-6th of an inch diameter. The magnetic power given to the electro-magnet by the leaden plate coated with chloride of gold, appeared to be equal to that which was produced by the platina plate. The magnetic effect of the current from the leaden plate, covered with gold leaf, was not so great. A coating of chloride of platina was afterwards found to answer as well as one of chloride of gold.

Some days after, a leading and platina battery of the same size were left working for four hours and a half, at the end of that time the lead plate acted fully as well as the platina; when the nitric acid was so much exhausted, that the lead was barely capable of magnetising the large electro-magnet so as to make it sustain a certain weight, the leaden plate was taken out of the porous cell, and a platina plate of the same size put in its stead. The platina plate was not able to make the electro-magnet sustain the weight which the lead had caused it to sustain. The magnetising power of the platinised or gilded lead and platina batteries, was compared several times in working an electro-magnetic machine—on these occasions the power of the leaden battery was evidently superior to that of the platina one. Sometimes the platina plate was taken out of the porous cell, and a platinised or gilded lead plate of the same size put in its place—the velocity of the machine was instantly and considerably increased; the same effect was produced when the platina plate was taken out of the cell, and a platinised platina one put in its stead; hence, it appears that a leaden plate coated with chloride of platina or gold, or a platinised platina plate, produces a more powerful voltaic current than a platina plate does. On the 24th of last May, a small platinised lead battery, and a Grove's battery of the same size, were exhibited before the Royal Irish Academy; the power of the former was obviously superior to that of the latter. By using double leads and single zincs, instead of double zincs and single leads, the power of the battery appears to be increased; when the lead plates have been used for a long time, they require to be newly gilded or platinised; after being used they should be rinsed in water, and dipped into a weak solution of chloride of gold or platina.

Seeing that the concentrated acids, by dissolving the lead, removed the gold or platina powder, and that the nitric acid was very expensive, I endeavoured to find in its stead a cheap substitute which would not act on the lead. The first that occurred to me was common nitre, I dissolved about the eighth of an ounce of it in sulphuric acid, which I diluted with nearly an equal bulk of water; I poured the mixture into the porous cell of a Grove's battery, and put into it a platinised leaden plate; I then sent the voltaic current through the helix of our large electro-magnet, the magnetic power given to the magnet appeared to be greater than that which was given to it by a Grove's battery of the same size, in which the platina was excited by concentrated nitric and sulphuric acid. I afterwards compared the heating power of the two batteries, and found the power of the platinised lead battery to be evidently superior to that of the other. I charged a platinised leaden battery with a mixture consisting of about five parts of sulphuric acid, five of solution of nitric, and one of nitric acid, and a Grove's battery with equal parts of nitric and sulphuric acid; the former fused a piece of steel wire, which the latter only raised to a white heat. When a platina plate is excited by a mixture of sulphuric acid, and a solution of nitre, the voltaic current appears to be as powerful as that which is produced by the plate when excited by concentrated nitric and sulphuric acid; the cost of the nitre necessary for charging a battery, is about the 20th part of that of the nitric acid. The power of the former declines sooner than that of the latter, but from the results of several experiments, I have come to the conclusion that the expense of doing a given amount of work by a platina battery, excited by concentrated nitric and sulphuric acid, would be three or four times as great as if the work were done by a platinised lead battery, excited by a mixture of sulphuric acid, and a solution of saltpetre. I have tried nitrate of soda, or cubic nitre, and nitrate of ammonia, as substitutes for nitric acid; but although they give great power, they do not answer as well as the common nitre; a solution of common nitre and cubic nitre, along with sulphuric acid, forms a mixture scarcely inferior to the solution of common nitre and sulphuric acid. The most powerful mixture for the platina or platinised lead battery, consists of about four parts of sulphuric acid, two of nitric acid, and two of a saturated solution of nitre; when no nitric acid is used, at least one-half of the mixture should consist of sulphuric acid, and the remainder of nitre and water—the solution need not be saturated with nitre. Four parts of sulphuric acid, two of a solution of chromate of potash, and two of the solution of nitre, make a most powerful exciting mixture for platina, but give comparatively little power to platinised lead; I endeavoured to find among the sulphates a substitute for sulphuric acid, but did not succeed. The voltaic current from a platinised lead battery, excited by two parts of sulphuric acid, three of sulphate of soda, and three of nitrate of potash, is very powerful, but considerably inferior to that which is produced by the concentrated acids.

On finding that platinised or gilded lead, and platinised platina were superior to platina, I saw that the cause of the superiority was that, in the platinised or gilded lead, and in the platinised platina batteries, the acting metals were, not lead, or platina and zinc, but gold or platina powder, and zinc; and that the gold or platina powder was more negative compared with zinc, than platina is. Hence I inferred, first, that a leaden plate, coated with any of those substances, which are more negative and cheaper than platina or gold, would act as powerfully as platinised or gilded lead; and secondly, that any other metal to which the platina or gold powder would adhere might answer as well as lead. I therefore coated, by the galvanic process, leaden plates with antimony, arsenic, chromium, molybdenum, and borax; the plates coated with arsenic and molybdenum were much inferior to platina; those that were coated with antimony and borax appeared fully equal to platinised lead, but they soon lost their power. The first plate which I chromed acted as well, and retained its power nearly as long as platinised or gilded lead; I afterwards coated a great number of plates with chromium, but all of them were far inferior to the first. The power of a leaden plate is greatly increased by being coated with mercury, or even with clay boiled in aqua regia, or with any other substance which I tried; but I have not found any substance to answer as well as the chloride of gold, or platina. I have compared with platinised lead, the other cheap metals coated with gold or platina, or chromium; and with the exception of cast-iron, they were all inferior to it. Platinised or chromed cast-iron answers as well as platinised lead; and without being chromed or platinised, cast-iron appears to act as powerfully as platina. The power of a cast-iron battery in magnetising our large electro-magnet, and in driving an electro-magnetic machine, was compared with that of a Grove's battery of the same size. In the two batteries the exciting mixture was the same—the power of the former appeared to be fully equal to that of the latter.

From the results of several experiments which I have made, on the relative power of platinised silver, and platinised lead, I feel confident that the latter may, without any diminution of power, be substituted for the former in Smee's battery. Cast-iron does not take the coating of platina powder (at least, until the hard surface is worn away), so well as lead or silver, and on that account it does not act as powerfully as either; but I have found zinc and cast iron excited by dilute sulphuric acid, as constant in their action as zinc and platinised lead. A platinised lead, or cast-iron plate 6 in. square, may be had for the 12th part of the cost of a platinised sheet of silver of the same size.

From the experiments which have been described, I infer, first, that a battery superior in power to Prof. Grove's nitric acid battery may be made by substituting platinised platina, or lead for platina, and nitrosulphuric acid and nitrate of potash, for nitric and sulphuric acid; and secondly, that a battery equal in power to the nitric acid battery, may be constructed by the substitution of cast-iron for platina.

The advantage of what I may call the nitre platina battery, over the nitric acid one is, that the expense of working the former is, as has been already stated, considerably less than that of working the latter. The advantage of the cast-iron or platinised leaden batteries, over Professor Grove's, is, that they are far less expensive in their construction. A plate of cast-iron or platinised lead may be had for 1s., whilst a platina plate of the same size will cost nearly 3l. Besides, a cast-iron or platinised lead battery may be worked by a mixture of nitre and sulphuric acid for one hour, for about the 10th part of the expense of working a Grove's battery for the same time.

The cheapness of cast-iron, and platinised lead, will enable every one to procure a powerful voltaic battery. A platinised lead battery is about 15 times as powerful as a common Wollaston battery of the same size. A cast-iron battery is a little less powerful than the platinised lead one, but I prefer the former, because the cast-iron does not require to be chromed or platinised. I am now preparing two large cast-iron batteries for the college: one will contain about 33 square feet of zinc, and 66 of cast-iron; the other will contain 80 square feet of zinc, and 160 of cast-iron—these batteries will be more powerful than any battery ever constructed. The expense will be very moderate, for the zinc plates and Wedgwood troughs of our former batteries will answer for the new ones.

IMPROVEMENTS IN TRANSMITTING MOTIVE POWER.

The following announcement appeared in the *Morning Post* of yesterday:—

"Notice is hereby given, that Henry Pinkus, formerly of North-crescent, Bedford-square, in the county of Middlesex, but now of Essex-street, Strand, in the same county, gentleman, intends to apply by petition, under the fourth section of the statute, 5th and 6th William IV., chapter 83, as amended by the second section of the 7th and 8th of Victoria, chapter 69, to her Majesty in Council, for prolongations for periods of 14 years of his several terms of sole using and vending his invention of 'an improved method of, or apparatus for, communicating and transmitting, or extending, motive power, by means whereof carriages or waggons may be propelled on railways or common roads, and vessels may be propelled on canals,' respectively granted to him by several letters patent—that is to say, by letters patent bearing date the 1st day of March, in the fourth year of the reign of his late Majesty King William IV., for that part of the United Kingdom called England, and the other places therein mentioned: and by letters patent sealed the 14th day of June, 1834, for that part of the United Kingdom called Scotland; and also for the like prolongation of his term of sole using and vending his invention of 'improvements in inland transit, which improvements are applicable to, and may be combined with, an improved method of, or combination of method or apparatus for, communicating and extending motive power, by means whereof carriages or waggons may be propelled on railways or roads, and vessels be propelled on canals,' granted to him by letters patent, bearing date the 21st day of October, in the fifth year of the reign of his said late Majesty, for that part of the United Kingdom called Ireland. And notice is hereby further given, that the said Henry Pinkus intends to apply by counsel to the Judicial Committee of the Privy Council, on the 11th day of October now next, or if the said Judicial Committee shall not on that day, at the then next sitting of the said Judicial Committee, for a time to be fixed for the hearing of the matter of the said petition; and that, on or before the said 11th day of October next, notice must be given of any opposition intended to be made to the said petition; and any person intending to oppose the said application, must lodge a caveat to that effect at the Council office, on or before that day. Dated this 13th day of August, 1847."

ACCIDENTS.

Pennett Colliery, Brierley Hill.—J. Yates was killed by a fall of coal, while engaged in blasting with gunpowder, at Messrs. Philpotts and Plants.

Cordeley-Coppice Pit, West Bromwich.—R. Davis was killed by falling into Captain Bennitt's colliery.

Ball-Hay Colliery, West Bromwich.—M. Milwood was killed at Messrs. Botteley and Tildesley's.

Wednesbury.—T. Pool was killed by a fall of roof at Lloyd and Foster's.

Fatal Explosion in a Colliery.—On Tuesday last, as the workmen were proceeding to their work at Mr. Russell's, the necessary precautions being taken, one party was lowered safely in the skip; but on the second lot reaching about half way, an explosion of fire-damp took place, and they were speedily, and, as it fortunately happened, safely landed. So soon as a descent could be made without danger, the state of the poor fellows in the pit was ascertained; when out of the four who went down, a boy, named Josiah Romsill, was found scorched to death, and two others so severely burned, that their lives are in danger, and the death of another is hourly anticipated.—*Birmingham Advertiser.*

Colliery Accident in Derbyshire.—On Friday morning last, an accident happened to a man named Henry Howe, who was employed in the coal-pits at Newbold. It appears that just as Howe had descended into a pit, one of the men at the top were attaching two corves to the hook, which broke the spring, by which means both of them fell down the pit; and, before Howe had time to get out of the way, one of the corves unfortunately caught him on the right arm and broke it.—*Derby Reporter.*

Mining Accidents in Belgium.—It appears, from a recent official return, that, from 1843 to 1844, the number of accidents which occurred in the mines of Belgium was 775, of which 271 were from falling in of earth, stones, &c., 159 from different causes, 68 in the use of ropes and chains, 64 from explosions of gas, 47 in the use of ladders, 33 by the explosion of gunpowder, 13 from the rush of water, and 120 which are put down as "accidents in different shafts." The number of returns of these accidents was 580 injured, and 546 killed. The greatest numbers killed and injured were from the explosions of gas, and the falling in of earth—the former being 180 injured, 122 killed; the latter 158 injured, 134 killed.

Coal-Pit Accidents.—There is very little occasion for expressing surprise at the general indifference to public health, when there exists in this neighbourhood, and particularly in the mining districts, so manifest a carelessness, of the commonest precautions for the preservation of life. From time to time the public are startled with the occurrence of some tremendous accident, sweeping dozens of men into eternity, and rendering as many families desolate. Sympathy is excited; precautions are popularly and scientifically discussed; months pass, and around the harrowing circumstances the softening influences of time begin to gather, and the event is only saved from forgetfulness by another periodical massacre. These wholesale casualties are occasional, and by common consent are left to accident or Providence, as each individual's scepticism or piety may dictate. But there is a continual and continued wilful destruction of human life going on in this immediate neighbourhood, seemingly without legal, certainly without moral, check or hindrance. Last week we reported an inquest held near Dudley, on the body of a boy who had fallen down an old and unprotected coal-pit. The lad had been seen flying a kite near the shaft, and in the morning was found mangled at the bottom. The jury, as well became them, animadverted in strong terms on the impropriety and danger of leaving the shafts of worked-out pits exposed, and the coroner promised to communicate with the authorities on the subject. So far well; but no more will be heard of the censure or the recommendation, until some equally intelligent jury, convened on a like occasion, again express their sense of the reprehensible conduct of the proprietors of those pits. The accidents arising from exposed shafts are fearfully numerous; and being things of every-day occurrence, the events and their causes are equally disregarded. When an excuse is deemed necessary, and it is seldom that one is condescended upon, the plea is, that nobody has a right to be near the pits; it is a trespass, and therefore the deceased had but himself to blame. This flippant apology for carelessness is not even a decent one, when the ground in which the pit is situated is fenced and secured from trespassers, and when the deceased is old enough to be able to take care of himself; but in a case like the present, where the sufferer is a boy of 11 years, playing on ground open to the public, a great deal of moral, if not legal guilt, attaches to the proprietor of these unprotected pits. Besides, we need not tell our readers in the mining district that even public footpaths lead past many of these. A child running in thoughtless wantonness, a false step, the slightest divergence from the beaten track, and the death that follows is horrible to contemplate. Last winter, it may be remembered, a poor girl and her father were driving a cow from a field; the girl suddenly disappeared down an old unprotected shaft—God knows how deep, and the father saved himself on its brink. This is a sample of the mode in which life is trifled with by ignorant and seemingly irresponsible men. It is a disgrace to society that such a flagrant violation of the commonest obligation which one man owes to another is tolerated. Whether the law can compel more attention to so simple a duty or not, public opinion is capable of effecting some reformation. The jury in the case that has suggested these remarks, has set a good example, in the firm but temperate censure they passed upon the offending parties; let their conduct be imitated upon all such occasions. Events will differ greatly from those which have preceded, if an opportunity of marking their sense of such criminal negligence does not soon occur to another jury. It may be that a verbal censure will be found insufficient to check the offence—it becomes them then to consider whether effect should not at once be given to their opinion by a specific verdict against the responsible party. This is an extremity which it is to be hoped the prudence, if not the good feeling, of those concerned, will render unnecessary.—*Birmingham Journal.*

Large Fall of Earth in a Railway Cutting.—On Sunday evening, several tons of earth fell on the Huddersfield and Manchester Railway, which is now making through Stalybridge, and completely filled a very large and deep shaft, which was being formed to enable the contractors to arch over the tunnel there. Owing to the cracking of the large balks of timber, the workmen had sufficient time to get out of the way, and no one was hurt. The accident to the shaft is attributed to a quicksand at that place. A large quantity of timber and some tools, &c., were buried.

IMPROVEMENTS IN GUN-COTTON.—Mr. Coathupe recently forwarded to the Chemical Society two specimens of gun-cotton, with a view to illustrate the greatly increased explosive effects that are to be derived from a subsequent immersion of the gun-cotton, when properly prepared in the ordinary way, in a saturated solution of chlorate of potash. "Having experimented with solutions of nitrate of ammonia, nitrate of potash, nitrate of soda, bichromate of potash, &c., for the purpose of increasing the explosive properties of this interesting substance, I can affirm that none of the results will bear the slightest comparison with those obtained from the solution of chlorate of potash, either in rapidity of ignition, or in intensity of flame. The process adopted for preparing the enclosed specimens was as follows—viz.: into a mixture of equal measures of strong nitrous acid, and of oil of vitroil, spec. grav. 1·845, the cotton was immersed and stirred with a glass rod during about three minutes, it was then well washed in many waters and dried; a portion of it was then soaked for a few minutes in a saturated solution of chlorate of potash, well squeezed and dried."

SULPHUREOUS MINERAL WATER AT TINTAGEL.—It may not be unimportant to some of your readers, to know that there exists in Tintagel, in this county, a sulphureous mineral water. The spring issues close to the insulated rock in the cove on the east side of King Arthur's Island; and so great is the quantity of the sulphuretted hydrogen gas evolved, that its peculiar odour pervades the whole beach: indeed, it was this circumstance alone, which induced me to search for a sulphuretted spring. Unfortunately, this mineral water is only accessible at low tide; still I consider it may be made of utility to the numerous invalids frequenting the neighbourhood of Tintagel.—J. VACY LYLE: *Launceston, August 2.—West Briton.*

ANTHRACITE COAL—ON THE PRESENCE OF FLUORINE.—Mr. G. C. Schaeffer in *Silliman's Journal* for May, says—"But little attention has hitherto been paid to the curious pseudo-sublimate, formed in the flues of stoves, in which anthracite coal is burned. Several years ago a committee of the Franklin Institute made a report on the corrosion of iron pipe, &c., by the burning of anthracite—this is the only notice of this substance known to us. The committee attributed the corrosion to the action of ammoniacal salts, containing sulphuric acid and chlorine. The substance in question is not wholly a sublimate, being formed partly by the condensation of ammoniacal salts, and partly by the direct action of the gaseous products of combustion on the iron; when the fire has been frequently re-kindled, there is more or less mixture of carbonaceous matter. The action of damp air on this substance when cold increases the corrosion of the pipe, as demonstrated in the report above-mentioned. This, however, is not the sole cause, for large flakes may easily be separated from pipes which have not been exposed to damp air, and these will always be found to contain much iron. There is another substance found in the pipes, this is formed of the ashes carried up by the draught, and is more or less encrusted, and mixed with the condensed products of combustion. Soon after the report of the committee of the Franklin Institute was published, my attention was drawn to the same subject. I found, on subliming even the smallest portion of these flakes in an open glass tube, that the glass was corroded; as I was engaged in determining the presence of another substance, I did not pay much attention to this indication of the presence of fluorine. I have more recently tried the usual test for fluorine, and find that with a small quantity of the sublimate the glass is always engraved—even a few grains will suffice to give marks which are visible when the glass is dimmed by breathing on it.* This reaction uniformly takes place, and we may therefore add fluorine to the number of elements already found in anthracite. Since making these experiments, my attention has been directed to a note by the Messrs. Rogers, on the occurrence of fluor-spar in anthracite; these gentlemen correctly attribute the fluorine to the vegetation of the coal plants, although no attempt seems to have been made to determine its constant presence in the coal. A single trial has shown that phosphoric acid is likewise present—I have not repeated the experiment, but there can be no doubt that this constituent of plants of our era was equally abundant in the coal plants. It may be remarked, that the sulphur is not altogether found as sulphuric acid in the sublimate, for hydrochloric acid disengages a large quantity of sulphurous acid. The investigation of this curious substance is not yet completed; the results, if worth recording, will be communicated to this Journal.

* If the leaden vessel in which this experiment has been tried is allowed to stand for some time, a large quantity of transparent and perfect octahedrons of iron and ammonia alum will be found. These may be readily freed from the black residue by agitation, with a small quantity of water. The crystals soon become opaque, and brown when exposed.

Original Correspondence.

WATER-POWER *v.* STEAM-POWER.

SIR,—I presume, in looking into your valuable Journal of the 14th inst., that Mr. "Observer's" letter, headed "Water-Power *v.* Steam-Power," must be in reply to a letter from "Mr. Rambler through South Wales," which must have appeared in your paper of the former week, and which I have not seen nor heard of; but, as it relates to Frongoch Mine, of which I know something, and the manner of drainage of the Cardiganshire mines all my life, it brings me to the question of steam and water-power. That water-power, where it can be obtained to secure effectual working in winter and summer, is preferable, no one will attempt to deny; but the Frongoch Mine, with few, if any, exceptions, previous to the erection of steam-power, has always been retarded, in winter by frost, or in summer by drought, not for the want of capacity in the reservoir, for they have remained for years unfilled, but for the want of sufficient area in the contributing ground connected with them. To explain this more fully, I will give you some details and calculations, stretching as much as possible in favour of the water-power! The contributing ground, I will, therefore, call equal to a square mile, and the fall of rain, as an average for 12 months, 60 in., both of which (area and rain fall) I have over estimated, deducting 20 in. for evaporation and absorption, leaving 40 in. available to the reservoir. Now, admitting the reservoirs to be of sufficient capacity, it will give a daily supply of, rather less than, 12-horse power, on a 48-ft. wheel, which I will take as the diameter of Frongoch pumping-wheel, and which, I suppose, to be pumping 120 or 140 yards, with 10 or 11-inch pumps. The further question that will arise, may be answered by asking, if it has ever, previous to the erection of steam-power, been sufficient? Has it been sufficient through the previous summer? And does not the mine, at every additional yard in depth, require additional power for drainage? Who is to foresee the extent of power that will be necessary for the effectual working of this mine in years to come, at 200 or even 100 yards deeper than its present bottom?—saying nothing of the certainty of an increase of water by deepening and extending the workings. In reference to the hydraulic engine spoken of, there can be no doubt that the greater fall will increase the pumping power; but, does it not diminish the dressing power, by sending the water below the wheel used for this purpose? Every engineer will, I believe, agree that where there is water-power to be depended upon, it is preferable for all purposes to that of steam, where coals cost from 15*s.* to 1*l.* per ton. But, where sufficient water cannot be obtained, there is nothing that I am aware of which suffers from the deficiency so much as mines; and, for all such purposes, if they will not pay for steam-power to make up for the deficiency of water, even if coals cost 30*s.* or 40*s.* per ton, they can never pay by working three or four months at a time twice a year (in the spring and fall). Not knowing anything of your paper which brought "Observer's" reply, I might, perhaps, be allowed to ask, for what purpose the steam-power at Frongoch had, in the first instance, been erected?—and whether it was prudent to allow its removal from the mine, where the daily requirements of power is increasing, without the slightest hope of meeting it by any increase of surface water-power. My object being wholly to gain information in matters of such importance to mining, has induced me to ask insertion of this letter in your valuable paper.

A MINE ADVENTURER.

Chorley, August 17.

COLLIERY WORKINGS—FOREST OF DEAN.

SIR,—Possessing a coal-pit in the Forest of Dean, about 70 yards deep, and having 100 yards breadth of coal, water free, lying on the deep side of it, with an inclination of one in six, I should feel very grateful to any of your scientific correspondents who would have the goodness to advise a young collier of the best and most economic mode of getting or raising the same to the pit bottom?

JAMES GRINDALL, jun.

Darkhill, near Coleford, Aug. 18.

ATMOSPHERIC RAILWAY SYSTEM—EXPENSES OF WORKING.

SIR,—I have, in two former letters, directed your attention to the advantages of Messrs. Clarke and Varley's elastic tube principle for railways, which is daily at work at Blackwall. I then stated that water-power might be found to work atmospheric railways, in some districts, with great economy. I beg, at present, to call your attention to the economy of the system, when steam-power is employed:—

We will suppose a line 4 miles long, with an engine at each end, of 100-horse power; this will work an 18-inch tube, drawing trains of 50 tons, at 30 miles per hour. The trains to start from each end every half-hour—running 32 trains each way per day.

The coals (per horse-power) consumed per hour is 3 lbs. (engineers will guarantee to construct engines that will consume less coals per horse-power than I have here stated).

The coals consumed during the stoppages of the engines, 30 per cent. of the above per horse-power.

Coal—300 lbs. per hour will be consumed by each engine while working; and as each engine station is employed for 15 minutes each train, the quantity of coal usefully burnt will be, per day ..... 2400 lbs.
Add waste, while standing, 30 per cent. ..... 720 „
Total ..... 3120 „

3120 lbs., multiplied by 2 engines = 6240 lbs., at 15*s.* per ton	£2	1	7
Two enginemen and two relief men, at 6*s.* per day	1	4	0
Two stokers and two ditto, at 3*s.* per day	0	12	0
Repairs to engines, oil, hemp, tallow, and depreciation, at 200*l.* per annum, £200 mul. by 2 stations / 365 days = per day	1	1	11
Piston leathers	0	3	0
Train conductors, two men, at 5*s.* per day, with two relief men	1	0	0
Total per day	£6	2	6

£6 2*s.* 6*d.*, total expense per day / 50 tons mul. by 64 trains, total tonnage carried = ·015 of a penny, or less than half a farthing per ton per mile.

£6 2*s.* 6*d.* / 64 trains mul. by 4 miles = 5¾*d.*, per ton per mile, supposing that 10 persons weigh a ton, after deducting the weight of carriage.

500 persons per train / 5·74 pence per train = ·0114 of a penny each person; or 83 persons carried one mile for 1*d.*, at 30 miles per hour.

London, August 18.

G. SHEPHERD, C.E.

THE MENAI TUNNEL BRIDGE.

RESPECTED FRIEND,—I observe a letter, in your last Journal, signed "Civil Engineer," wherein he makes mention of my having made a machine, by which to test the strength of the proposed tunnel. I am at a loss to conceive upon what data he makes that statement; the machine I made was for the purpose of showing the principle upon which all bridges are founded, and had no special reference to the proposed iron tubes. He further adds, that I have given my opinion on supposed data. I admit it; but I never disputed the capabilities of making a tunnel sufficiently strong for the purpose intended, provided a sufficient quantity of material be employed; and I have no doubt, if 1200 tons of iron be used in each of the four proposed tubes, *that if properly disposed*, a safe structure may be made on that plan. But what surprises me much is, that directors of railways should be so reckless of their funds, as to allow engineers to make such costly experiments, when the objects sought might be attained at less than *one-fourth of the cost, offering a greater degree of strength, and, consequently, greater positive security, which is capable of being demonstrated beyond the shadow of a doubt*; it, therefore, appears to me to be paying much too dear for a whistle. "Civil Engineer's" conclusion, that R. Stephenson was not indebted to J. De la Haye, for the idea of the proposed tube, appears to me to be very erroneous. With respect to his observations relative to General Sir C. Pasley—surely no one but a "man in the moon," or under its influence, could have imagined that the general meant, that the tides would have any effect upon the tubes when fixed in their intended position; it being quite clear that he meant his observations to apply to it during the progress of rising them, by means of the admitted, complicated, and, it may be presumed, very expensive machinery.

Bristol, 8 *mo.* 17.

T. MOTLEY, C.E.

THE MENAI TUNNEL BRIDGE.

We have received a very long letter from Mr. De la Haye, in answer to "Civil Engineer," in last week's Journal. We have not room for the communication entire, but, in justice to the writer, insert the following portion:—"Permit me to explain a few words in answer to "Civil Engineer," who, in his letter, published in the last Number of the *Mining Journal*, denies that my invention, for constructing iron tunnels, has anything in common with the Menai Straits scheme. He asks, whether I had proposed to employ the tunnel in its present position? I have repeatedly stated, that this modification belongs to Mr. G. Stephenson; but I claim wrought-iron railway tunnels as my invention; and I deny that any individual has a right to modify so novel and gigantic a plan, for a particular locality, without acknowledging the original."

PROGRESS OF INVENTION—PAST, PRESENT, AND FUTURE.

SIR,—Whilst our friend, John De la Haye, is amusing the public with his schemes, at least a century in advance of the age, and becoming the exemplar of the withering effects upon the inventive resources of genius, of testing the utility of every new project by an appeal to "the eminent engineers" (as he facetiously terms them), who, on account of their eminence, are allowed, without exciting public contempt, not only to purloin the inventions of others, but change their opinions and judgment as often as the wind veers—I will, with your permission, amuse your readers with the outlines of a project, derived from that Utopian vista of the future, whence all the magnificent speculations of the past and present have been taken; from whence have originated our electric telegraphs, railways, ocean steamers, and lake-draining engines of colossal dimensions, which, in their act of primary advent, were deemed moonshine. I have now lying before me one of those racy documents, termed caricatures, published about 1806, whose value I take to be *the lesson* which it teaches to those disposed to ridicule projects they do not understand, and how unwise it is to depreciate as folly and ridiculous speculation that to which singularity and novelty attach as leading features. Here we have grouped together—"A Bridge to the Moon"—Tapping the Globe for Water—Plan of the Gravesend Tunnel—the Strand Bridge—Patent Timber Mould—Icon of the Explosion of the Patent Gas Holder in the Presence of "Winsor"—Feeding a Prize Ram with Vauxhall-bridge Shares—Proposals for a Cattle Insurance Company—a Chimney Sweepers' Company—a Lunatic Company—Patent Brewery—a London Joint-Stock Bank, &c. All this was, no doubt, ridiculous enough at the time, and would be so now, were it not that many of these then ridiculous impossibilities have been accomplished, and others made useful and profitable. Now if, of these moonshine speculations, as our progenitors viewed them, *all the really practicable* have been accomplished, what may in like manner be said of projects now broached, which have nothing impossible about them—on the contrary, every thing possible—and only expressed in startling novelty? Steam has triumphed on the surface of land and water, and who can say that, in the next 50 years, a message will not be sent, and an answer received, from the American President—aye, from the Governor-General of India—in five or ten minutes? That a metallic railway tunnel may not be in full utility as the project of railway trains from London direct to Paris, underneath the waters of the Straits of Dover; or that the magnificent and fearful scheme, forming the sequel of this letter, may not have been fully and completely accomplished. We smile at the project of our friend, "*in situ*," a sub-marine railway from Dover to Calais, composed of a metallic tube, merely because it is strangely novel, and its originator is not one of "the eminent engineers." We are in like manner startled, and more particularly Major-General Pasley, at the idea of stretching a colossal tube, constructed of wrought-iron, in weight 1200 tons, over an arm of the sea, for the transmission of railway trains; but the curling lip, expressive of contemptuous emotion, incidental to the originator of such stupendous appliances, is exchanged for the expression of wonder and admiration in the latter, merely because we contemplate the boldness of an "eminent engineer."

To the industrial arts, *the sky, the sea*, and *the solid earth* are storehouses of polytechnic resource—all our mineral stores are derived from the latter, and worked into useful condition by the aid of the first; but all these varied gifts would be useless in the absence of one, of more importance than all the rest, without whose aid metals could not be extracted from their ores and mineral forms, and the facilities of the appropriation and particular conversion of these invaluable treasures would for ever have been rendered nugatory by refractory and useless qualities. This wonderful substance is caloric—the cause, source, or matter, of heat, whichever you will. We require heat for our furnaces, to smelt our metallic ores, and generate steam for the production of motive power. We derive our supplies of heat, in a secondary manner, by the combined agency of the mineral products of the earth, procured at great continual labour and expense, oxidised by the oxygen of the atmosphere—by the elimination of latent heat, of heat locked up in the constitution of all organic and inorganic bodies, by a variation in their constitutions, and, most generally, by the liquifaction or solidification of oxygen and hydrogen gases. But there is an abundant and facile source of heat, at present totally unused by man, with the solitary exception of the boracic acid lagoons of Sicily—primitive in its origin, cheap in its source, easy of access and application, and inexhaustible in supply—I mean subterranean heat. In the *Fundgriiben des Orients*, and also in the *Journal des Mines*, will be found the following particulars:—Two forces are continually battling for the mastery of temperature at the earth's surface—the thermo-negative atmosphere and the thermo-positive earth. The influence of atmospheric cooling does not extend into the earth beyond a few feet from the surface, varying according to latitude, being deepest at the Poles, and least so at the Equator, as developed by Humboldt, in his *Theory of Isothermal Lines, and Line of Perpetual Snows*. In Polar latitudes the atmosphere determines the line of ice to some 90 feet in depth below the surface of the ground; whilst in the Tropics, terrestrial radiation of subterranean heat places the same limit to some thousands of feet above the level of the seas. In medium latitudes this equation of temperature is found near the surface—shafts have been sunk, wells dug, and Artesian holes bored to various depths, and in various localities, with one attendant fact of a continually increasing temperature for variable depths, ranging from 93 feet to 54, for an augment of 1° Fahrenheit. Thus, at Monkwearmouth, Sunderland, the deep coal shaft gave 1° for every 93 feet of depth to nearly 2000 feet. At Paris 72 feet for each degree, and at Preguy, on the flanks of the Jura, an increase of 1° Fahrenheit for every 54 feet of a depth of 680 feet. Now, as the medium of a continuous and cheap manufacture of steam for the generation of motive power, whence all our operations are derived, is a desideratum, I, William Radley, Ch. E., do hereby suggest to "the eminent engineers," that money would be better expended upon a subterranean heat shaft, than upon a Tunnel under the Thames, or a bridge which has no utility. At a depth of 10,000 feet, anywhere in England, under proper provision for ventilation and refrigeration, to keep the workmen cool during the progress of their work, or sinking and subsequently fixing cast-iron steam generators, with feed and steam pipes for the supply of water, and transmission of steam to the surface of the earth, an inexhaustible volume of steam, capable of driving all the steam machinery in the universe, would be constantly evolved, by simply turning a brook or streamlet into the feed pipe of the subterranean generators. The Monkwearmouth coal shaft cost barely 10,000*l.* so that, with the ample allowance of 60,000*l.* for the thermic shaft, and 60,000*l.* for the apparatus, which, because it would never rust, would never perish, this magnificent project, capable of engaging a nation's attention, and yielding a princely revenue, could be accomplished at a moderate expense.

Now, Mr. Editor, as the "eminent engineers" have plundered De la Haye of his tunnel, I cannot complain if some of the same monopolising fraternity should despoil me of the merited result of patient incubration. For instance, as the motive power on the London and North-Western Railway might be completely superseded by this mode, I should have great reason to fear a piracy of the invention, did not a particular interest at Clay Cross intervene. It would not be matter of wonder, if the course of the current century should witness the application of plutonic steam to purposes of terrestrial motion, and more especially if the "eminent engineers" should take it into their heads—I had nearly said, loggerheads—to try the project. The expense would not be an eighth of that of the Thames Tunnel, and the advantage, in a domestic point of view, would be enormous. For instance—warm baths and hot shaving water all over the metropolis without notice; soup always hot at the taverns and eating-houses; the temperature of summer without the hot sunbeams all through the winter; but as speculations of this sort, tending to anticipate the thoughts of your readers, are derogatory, I shall conclude with your humble servant—WILLIAM RADLEY, Ch. E.: *August* 18.

THE THEORY OF VENTILATION.

SIR,—The importance of this subject induces me to trespass upon your columns, and upon my time, to fulfil the promise given in a former Number of the Journal. I have hitherto delayed entering upon it, in accordance with that promise, in order that the discussion upon ventilation, which has lately appeared in the Journal, might be brought to a close, considering that, probably, from the information which was naturally expected to be promulgated during that discussion, they might be rendered unnecessary, and also not wishful, that these communications should appear, and be classed as papers elicited by that discussion. I have made use of this title—"The Theory of Ventilation"—as I am well aware, and it is also now universally admitted, that no specific mode is applicable in the ventillation of mines—that the system, which in one colliery, and under certain circumstances, is efficient and safe, becomes in another colliery, or even the same colliery, but under different circumstances, inefficient and dangerous; this, and the succeeding communications, will, therefore, consist of a general inquiry into the nature and qualities of the gases met with in the mine, and to their origin and effects. These gases, although subject to several modifications, as they may be severally combined, may be classed in one of the following divisions—viz.: atmospheric air, carburetted hydrogen, and carbonic acid gas—the two latter practically known as fire-damp or sulphur, and black-damp or choke-damp. These two may be styled the demons of the mine, as it is owing to their influence and effects that the lives and happiness of so many are daily periled. The first, or atmospheric air, will not require a lengthened notice—it is a substance with which all are acquainted. I shall, therefore, confine myself to a consideration of its properties, under circumstances strictly applicable to the title I have taken for these communications; but shall not treat upon it as a separate division, or part of these communications, but shall show those properties, or effects, as they may severally present themselves in a consideration of the two latter. Carburetted hydrogen, or fire-damp—the explosive gas met with in our mines—claims, from its importance and effects, priority of notice in any treatise on ventilation. It would ill accord with the title of this communication, were I to go into a consideration of the nature and formation of this gas. Such a procedure would be interesting, and also useful, but would not fulfil the object I have in view; it will, therefore, be understood that, by the term, origin, I confine myself not to its actual formation, or generation, but to its accumulation. The specific gravity of this gas, necessarily varies in the ratio of the gravity of the other gases, inflammable, or non-inflammable, with which it may be compounded; but under all circumstances, so long as it retains the property of an inflammable gas, it is much lighter than the atmosphere—being generally about half the weight. In consequence of the lightness of this gas, it is always found in fiery mines, in the upper or rise workings, where it assumes, when in a state of rest, a wedge-like shape—the broadest end of the wedge being nearest the face of the working; and its under surface forming an horizontal plane, resting upon the atmosphere. The late Sir Humphrey Davy, in his experiments upon this gas, discovered the following extraordinary and useful properties—viz.: "That it would not explode with less than six times its volume of atmospheric air—nor when diluted with more than 13 times its volume; and, consequently, under either of these conditions, it ceased to become explosive. A knowledge of these properties is of the utmost importance, as from them we know certain states in which the damp becomes innocuous. A consideration of the first state, or condition, of safety, is necessarily precluded in any discourse upon ventilation; and the other becomes the only one practically applicable, because the first has to be rendered explosive before it can take the character of a non-explosive gas. It will be evident that, in the second, the ventilation of any particular part of a mine, supposed to be highly charged with damp, is a mere matter of calculation; since if the damp is diluted to the extent of 13 or 14 times its volume, it is either removed from the mine, or diluted to the extent of non-explosion. The inhalation of this gas, as it is met with in the mines, does not seem to have any very injurious effects upon the human frame; nor in fact, from its properties or proportional combination, could it be expected, being composed of atmospheric air, hydrogen and carbon, in such proportions, that the deleterious effects of the one is counteracted by the other; and this is shown by the healthy state and condition of firemen, who perambulate a fiery colliery daily, and who are, consequently, for a considerable portion of their time exposed to its influence. It is seldom found in practice, that these gases—viz.: fire-damp and black-damp—are met with together, although this occasionally happens; when it is the case, the fire-damp loses its explosive properties, and although it will burn upon the candle, with a long brown flame, or top, as it is its destructive characteristic of incapability of supporting combustion, and they apparently act and counteract upon each other. A consideration of this property, inasmuch as carbonic acid gas is readily and easily evolved in any quantity, however large, may, in some instances, be found highly useful—for instance, if a particular portion of a colliery should be highly charged with fire-damp, and, from some peculiar circumstances, it should not be advisable, or even practicable, to throw sufficient air upon it for its displacement; if carbonic acid gas is formed in it in sufficient quantities to counteract its explosive properties, the mine would be comparatively ventilated by the very antagonism of ventilation.

The ventilation of a fiery colliery becomes a matter of moment, when the gases are principally evolved or given off from the roof. When the gas lies in the coal, the extraction of the coal removes its source; but that extraction in the former instance, only liberates it, and, by such liberation, completely removes all the modes or auxiliaries of ventilation which may have been adopted in the working. Much has been said and written about airing the waste, fallen, goaf, or gob, as it may be locally termed; and much that has been said and written, has been in an intemperate, capricious, and imperious tone. It is a subject upon which the mere theorist cannot enter. The practical collier sees difficulties of a most formidable nature, and difficulties which could not present themselves to any other party.

I will not, at least at this time, occupy your columns by entering upon this, nor by showing the infeasibility of the various plans which have, from time to time, been submitted; but will content myself by merely advising the mine agents to always, and under every circumstance, keep a good free air road round the confines of the goaf; to let a strong current continually traverse that road, and, upon no consideration, and for reasons which I shall adduce in my succeeding communications, to allow that current, after having passed the goaf, to travel the workings as auxiliary to the ventilation. Faults are also found to give off this gas in great quantities, and a slight fissure in the strata may serve, upon being denuded of its covering, to fill a mine to the point of explosion, which might previously have been considered perfectly safe; and, as under these circumstances, there is often a laxity of attention, such an occurrence is fatally destructive, and, most probably, to this cause may be referred those casualties, which appear so inexplicable, and contradictory to the principles of good working.

Carbonic acid gas, or black damp, as stated above, is incapable of supporting either combustion or life—its specific gravity is considerably more than that of fire-damp, being about half as heavy again as the atmosphere. It is the product of combustion, and fills up the vacuum formed by an explosion of fire-damp. Space and time both forbid my entering upon a full consideration of this gas, but I will speak of it more fully in the ensuing parts of this communication. In order to compress this subject into reasonable bounds, I purpose to inquire first into "the auxiliaries of ventilation;" secondly, "the phenomena of ventilation; and, lastly, to offer such hints and suggestions, as may present themselves for the guidance of the mineral agents.—F. BEST: *Newport, August* 17.

STEPHENSON ON DOUBLE GAUGE RAILWAYS.

The Act of Parliament obtained by the Great Western Company for the Oxford and Rugby Railway, and also between Worcester and Wolverhampton, on the Oxford, Worcester, and Wolverhampton Railway, requiring the introduction of a narrow gauge line, Mr. Brunel reported to the directors, recommending the addition of a third rail between each separate broad gauge line—the outer rail of each to be common to both gauges. In this report, Mr. Brunel treats the matter with the greatest *nonchalance*; and assures his directors that the thing is perfectly correct, and there is no more complexity or difficulty about a united gauge line than there would be on either separately. To this, Mr. R. Stephenson, M.P., has just published a reply,* in which he goes a little deeper into the real merits and probable results of the union, and raises a few startling objections, which, on examination, will be found not to be fictitious. Having admitted the possibility of laying an intermediate rail, he shows, in the first place, notwithstanding Mr. Brunel's opinion to the contrary, that crossings between main lines are very often necessary. On the London and Birmingham (112 miles) there are no less than 58; and on the northern lines this number is vastly increased. At the Slough station alone, on the Great Western, there are two crossings between the main lines. He proceeds to describe that, according to Mr. Brunel's own drawings, at every crossing there must be on one plan two additional half switches, two additional crossing points, two additional pairs of overcrossing points, four additional gaps, and three additional meeting points. On another plan, two additional switches, two crossing points, two overcrossing points, six gaps, and four meeting points—all additional, to be passed over by trains of either gauge. On another, two automaton switches of dangerous construction, to be passed over by all trains—one of which being placed the wrong way, would meet all the trains in one direction—with two half switches, four crossing points, two overcrossing points, six gaps, and four meeting points—all additional, to be passed over by every train. All this complexity adds to the difficulty and danger of railway transit; and the difference as to interruptions, or gaps, is at least two to one in the three rail system over a single gauge. Mr. Stephenson on this branch of the subject comes to the conclusion, that—1. The mixed gauge system increases the complication so much, as to be inadmissable; and 2. That, notwithstanding the exercise of the utmost care in construction and maintenance of way, the mixture of gauges, either by means of three or four rails, introduces in the road itself a greatly-increased risk of accident, entirely incapable of remedy, and scarcely justifiable by any considerations of mere convenience. With regard to the cost, the addition of a narrow gauge to a broad gauge line would be 5974*l.* per mile; and the increased annual expense of maintenance and working, 500*l.* per annum. Capitalise this expenditure at 4 per cent. interest, gives 12,500*l.*, which, added to the above, shows the additional cost of a mixed gauge line to be 18,474*l.* per mile—a very pretty extra cost for a less safe and less efficient railway than on the ordinary mode. Mr. Stephenson's report is illustrated by some very beautifully lithographed drawings of the various plans proposed by Mr. Brunel; and is well worthy attentive perusal by those parties who are more immediately connected with the lines affected by the threatened abortion.

MR. ROBERT STEPHENSON, M.P., ON PROTECTION TO NATIVE INDUSTRY.—Mr. Stephenson, the engineer, now the Member of Parliament for Whitby, in his speech to the electors, thus spoke upon the question of protection to native industry:—"I feel the effects of the good times and the bad times. I feel also the effects produced by the changes in the laws, not only in this country, but abroad. You know that I am a large manufacturer of locomotive engines. Some 8 or 10 years ago I enjoyed almost a continental monopoly of the supply of locomotive engines to Germany, France, and Russia. They were unable to produce the same article at the cost I did; therefore, they bought them out of the market. But they soon found the injurious effects of the competition. Not that competition is injurious; on the contrary, it is of advantage to any man. I beg your attention to this case. I held the monopoly. They had no chance with me. Their government saw that the industry of the people was shackled, although they were able to buy the article of me cheaper than they could produce it themselves. They might safely send their money into our country, but that was throwing the balance against them; and the governments of these countries—France, Germany, and also Belgium—immediately resorted to protection laws. They laid on a duty amounting to something that made the cost equal to receiving my engines, or making their own. The result of this was, that new factories were established, new industries developed, iron furnaces started up in every direction, and a new creation of wealth took place, instead of sending it into my pocket. Now, if any body had a right to complain, or to be a free trader, I certainly had. But, on the contrary, after visiting these countries, some few years after these protection laws were passed, I saw a marked improvement. The people were more extensively employed, new manufactures were created, and, instead of sending their money out of Germany into England, they produced engines to my injury but to their own benefit; therefore, the protection laws are necessary to foster new businesses and new manufactures. France at present exercises the same power in respect of railway bar-iron. In this country railway bar-iron could be manufactured at half the cost it can be produced at in France; and for some time our Welsh iron-fields were principally occupied in manufacturing rails for French lines. The same case applied there, but not to me; it applied to the Welsh ironmasters. The result is, they manufacture their own rails, and make their own railways, perhaps at a little more cost, but then they keep all their capital at home instead of sending it abroad.

* *The Double Gauge: Observations* by Mr. R. STEPHENSON on *Mr. Brunel's Report on the Double Gauge.*

Mining Correspondence.

ENGLISH MINES.

ABERGWESSIN MINES.—Since my last report, we have driven a level south from the engine-shaft in the 20 fm. level, and have cross-cut two parallel lodes—the Comet and Couch's lodes: we expected to have cut the Comet lode in its underlay, at from 3 to 4 fms. from the shaft, but found it 7 fms., it having changed its oblique for a more vertical position in depth; we also found this great lode (hitherto 30 ft. thick) reduced in size to from 12 to 15 ft. thick, and carrying a fine flookan, of 2 to 3 ft. thick, on its foot-wall, thickly interspersed with lead, white prian, and quartz. Here the lode is composed of the most beautiful matrix for lead, and is dredged throughout with friable ore: in fact, this lode is all we can wish, although not equal to the solid course of ore, 12 to 14 ft. thick, which this same vein has yielded in the adjoining sett, at the opposite side of the mountain—Lord Cawdor's Mine. Upon this lode we have opened about 20 fms., and have saved the chief part of the broken vein for cleaning; the present end progressing into the mountain, is in candied spar, prian, and lead, the whole being good saving work. In cross-cutting Couch's lode in this level, we find it fast approaching in its underlay to the Comet vein, and, from its present obliquity, will form a junction with that vein at 3 to 4 fms. under the 20 fm. level: this lode is also reduced in size, but retains its rich characteristics: we, therefore, have resumed sinking to the 30 fm. level. Our shaft is now 4 to 5 fms. under the 20 fm. level; and the remainder of the shaft I have set at 15*l.* per fm., to the 30 fm. level under adit, about the yield of which there can be but one opinion. Some of the shareholders having remarked that we progressed quietly, and enquired how near we are to paying dividends, my answer was, "Judge for yourselves—I only narrate facts for your guidance, and wish every shareholder would inspect, or cause an inspection, of the works for themselves." I always stated, that I felt confident these mines would yield dividends in the 30 fm. level; and, as we progress in depth and extension of levels, we have abundant proofs of the soundness of this opinion; and if the upper levels were extended into the mountains, I have no doubt of their paying dividends at a shallower level. The high price of provisions, and consequently high price of labour, has hitherto operated as a check on this part of the works; but as soon as a new winze communicates air from the 10 to the 20 fm. levels, we shall vigorously push all the 20 fm. levels upon the respective lodes into the mountains, which rise so bold on the courses of the veins, as to give us upwards of 100 fms. of backs to be wrought to their respective summits.—P. P. Couch: August 9.

BARRISTOWN.—In the 18 fm. level, west end, the main lode has slightly improved for the last few fms., but at present it is not producing so much ore—worth about 10*l.* per fm.; the rise behind this end is worth about 12*l.* per fm.; the lode in the winze in the bottom of the 18 fm. level, behind the 18 fm. level end, is worth about 8*l.* per fm. The 12 fm. level, west end, on middle lode, is worth about 8*l.* per fm. The western stope, on middle lode, is worth about 8*l.* to 10*l.* per fm. At Nangle's shaft, the water has fallen about 4 fms., and we hope soon to be able to commence working it: the end will unwater about 9 ft. deeper than the present bottom of Nangle's shaft.—Thos. Angove; George White: August 13.

BEDFORD UNITED.—At Wheal Marquis, the sumpmen, in the past week, have been engaged cutting the plat, previous to commencing driving the 90 fm. level; the lode in the sump-winze still remains worth 90*l.* per fm.; in the western winze there has been no lode taken down. The lode in the 80 fm. level east is 3½ ft. wide, and worth 12*l.* per fm.; the stopes, in the back of this level, have been set on tribute; the lode therein is worth from 15*l.* to 20*l.* per fm. The lode in the 70 fm. level east is a little improved, being 2 ft. wide, and good work. There is no alteration in the 58 fm. level east. At Liscombe, the lode in the adit level, and rise in this level, is without alteration. The south engine-shaft is suspended for the present, in consequence of the falling off of the surface water, and the sumpmen are put to drive east from the plat; the lode in the end is 3 ft. wide, and promising. In the adit level east the lode is 2 ft. wide, producing some stones of ore.—J. Phillips: August 17.

COATLITHE HILLS.—The vein continues to improve as it is explored eastward; and when the junction of this and the main vein is cut (which is 30 fms. further eastward), and have got more weight of ground on, there is no doubt but that the adventurers will be well remunerated for their outlay. The level east from A shaft is so wet, as to delay the working very materially, until the horse level is holed into the shaft, which is 9 fms. from the end; this will occupy two months in driving. The appearance of the vein is rather more promising, and has turned out some very large stones of ore within the last day or two. The level east from A shaft has been driven about 3 ft. during this week, and the horse level a fathom.—J. M. Paull: August 14.

COOK'S KITCHEN.—At Chapple's lode, in the engine-shaft, which is now down 7½ fms. under the 180 fm. level, there is a fine lode, producing a little tin. In the 180 fm. level east, the part of the lode which we are carrying is about 4 ft. wide, and worth 6*l.* per fm.; in the 180 fm. level west, the part of the lode which we are driving, is 4 ft. wide, and worth 7*l.* per fm. In the 170 fm. level east, the part of the lode we are driving on, is 4 ft. wide, worth 8*l.* per fm.; this end is suspended, for the purpose of sinking a winze for ventilating the 180 fm. level; in the 170 fm. level west, the part of the lode on which we are driving, is 3½ feet wide, and worth 7*l.* per fm. In the 160 fm. level west, the part of the lode on which we are driving, is 6 ft. wide, and worth 25*l.* per fm.; as there is a great part of the lode standing to the north here, we shall now drive in that direction, for the purpose of ascertaining its size and quality. The 92 fm. level west, on Eudy's lode, is suspended for the present, the men being placed in the 180 fm. level west, for the purpose of pushing on this level to the little cross-course, and to drive south to Dunkin's lode with as little delay as possible. The men that were engaged in driving the 70 fm. level west, on North Tincroft lode, are now employed on work connected with the new wheel and stamps. On the Druid lode we have cleared the boundary shaft, and shall now commence clearing the adit west from it, in our own sett. The amount of tin sent to the smelting-house, during the four past weeks, is 27 tons 5 cwts. 3 qrs. 10 lbs., producing 1305*l.* 4s. 9d.; and we expect that we shall rather increase than otherwise on this quantity—that is according to present appearances. The pitches are looking better, on the whole, which gives us ground for expecting an increased quantity of tin.—J. Vivian: August 16.

COOMBE TIN.—I send you a few lines, to inform you that I have been over to Exeter, and seen Mr. K., on the subject of the deeds, and that everything is perfectly right concerning them. He has pronounced that they shall be ready, and that we shall have them within a fortnight's time. This morning we have cleared up the bottom of the level; we have broken some large stones of tin—the lode is very large, and we have discovered some very large rocks of tin.—Martin Dunn: August 13.

CUBERT SILVER-LEAD.—After my going through this mine to-day, I see nothing different from what I reported last week; the appearances are much the same, both as respects the tribute and tutwork department. We sampled, on Tuesday last (computed), 60 tons of rich silver-lead ore.—R. Rowe.

DEAN PRIOR AND BUCKFASTLEIGH.—In the deep adit, we have just cut through the main part of the lode to the north; it has a more promising appearance than when cut through 13 fms. to the east, or rather 13 fms. behind the present end, and is inclining towards the south part or limb of the lode, which is a favourable indication—for I find generally, where these lodes have formed a junction thus, the lode has been productive for ore. In the 10 fm. level, driving west, the south part of the lode is about 9 in. big, composed chiefly of spar. In the 20, under adit, or bottom level, the lode is of a very promising character, composed of spar, prian, and mundic, with a small string of flookan; the strata is congenial for ore, and is improved for driving—present price for driving 3*l.* per fm. The lode in the pitch, in the back of the 10 fm. level, is without alteration since my last report; the men are working with spirit, and I think they will get wages. I have set a pitch in the bottom of the 10 fm. level, at 12s. in 1*l.*, by two men, which will commence working this day. The house for the grinder is covered in, ready for fixing the castings. I have just received a letter from the ironfounder, stating that the whole of the castings will be ready for the grinder by Wednesday next. We are getting on with the materials for the water-wheel, and shall be ready to stop the engine whenever we can be supplied with the cylinder socket pieces for the axle and arms of the water-wheel: we shall make all the progress we can, in order to carry the work into effect.—August 16.——In answer to your inquiries as to the progress we are making with the respective works, I beg to inform you, that we have, after some little delay, made the purchases of the timber required for the wheel and other purposes, and are pushing on the work with full force, so as to get her to work without loss of time. I beg to say, your instructions that no time should be lost shall be strictly attended to; indeed, I am very anxious to get the wheel to work—for as soon as we turn the present wheel (intended for the stamps) idle, we shall commence changing the pit work in the engine-shaft. We shall lose no time in fixing the grinder, as soon as we receive the castings, and are busily engaged in completing the ore-floors, and other works at surface, preparatory to our sampling, which I expect will be on an early day—when the produce of the ore already at grass will, I have no doubt, satisfy you, and bear out the reports hitherto made.—H. Choake: August 18.

DEVON AND COURTENAY CONSOLS.—In the 30 fm. level, west from the engine-shaft, we have intersected a cross-course—we are now driving upon it, for the purpose of discovering the western part of the lode; in the end, driving east, in this same level, the lode is 2½ ft. wide, composed of spar, peach, and mundic, mixed with killas and spots of copper ore. In the deep adit level, on the south lode, the lode has very much improved since my last report, it being now 20 in. wide, composed of a white soft spar, with flookan, and good stones of lead ore, in favourable ground. In the shallow adit level, on the north lode, the lode is 2½ ft. wide, composed of flookan, spar, and can, with small branches of lead and copper ore. The men in the engine-shaft are progressing as fast as possible towards the next level; and, although the water has not increased this last week, it is become necessary to have a small lift to sink with.—N. Seccombe: Aug. 17.

DRAKE WALLS.—No alteration in Brenton's engine-shaft since my last. The sumpmen are preparing to fix a plunger-lift in the 50 fm. level, after which they will commence sinking; in the stopes, east of the above shaft, there is no alteration—good tin ground. At the machine-shaft the stopes are looking well. At the footway-shaft the stopes are tinny, not rich. We have four men at the eastern part of the mine, near the Tamar river; from its bearing and character, we think it to be the Wheal Russell lode—it is a south underlay, and of some promise. We shall continue costeaning, to cut the Drake Walls branches on lodes. We sampled yesterday, computed 17½ tons of tin; it is now at Plymouth, on board for Truro. We are short in quantity promised, in consequence of the dry season, not having sufficient water for dressing.—Richard Williams: August 14.

DYFNGWM.—We have made a capital discovery in the 22 fm. level east: in driving east from the winze, lately communicated to the 16 fm. level, we took the south side of the lode with us—the lode in this place being about 8 ft. wide—seeing some indications of lead in the south side, I set the men to take down the side of the level, when we made the above discovery. I have now set the men to take down the whole of the lode, from the winze to the end, which is about 5 ft.; according to the present indications, the new discovery is worth 10*l.* per fathom for lead. I shall be able to give a more particular account in a few days. This is sufficient to show the necessity of sinking deeper, as the lead is all leading very strong under the 22 fm. level.—J. Reynolds: Aug. 16.

EAST CROWNDALE.—The ground in our engine-shaft is still unfavourable for sinking; we have sunk, in the past week, 6 ft. I am glad to state, that the new north lode, mentioned in my last report, is much improved in appearance, and is now upwards of 2 ft. wide, composed of peach, mundic, and excellent stones of copper ore, and evidently will continue to increase in size as it goes down. I hope, in my next, to be able to say we have got a regular course of ore; and I confidently expect, when we get to the 50 fm level, we shall have large returns from this and also from the main lode. At the Rix Hill adit level the ground still continues just the same as when last reported on.—S. Paull: Aug. 15.

EAST TAMAR CONSOLS.—Harrison's shaft is sunk 7 ft. under the 54 fm. level—the lode in the shaft is 2 ft. wide—fluor-spar and ore, a very kindly lode; the 54 north is 20 in. wide—work of a coarse quality; the lode in the 54 south is 2 ft. wide, producing saving work. The lode in the 46 north is 18 in. wide—fluor-spar and silver-lead ore; the lode in the 46 south is 14 in. wide—capel and ore. The lode in the 38 south is 15 in. wide—work of a good quality. At Charlotte's, the lode in the 11 fm. level is 20 in. wide—fluor-spar and ore, a very kindly lode; the pitches are looking just the same as last reported. The house is up, and ready for the steam-whim; and I hope Mr. West will soon get in the machinery, as it will be a great saving in our future course. We sampled on Wednesday last, computed 50 tons of silver-lead ore.—B. Robins: August 17.

GREAT MICHELL CONSOLS.—In the 35 fm. level, both east and west of the engine-shaft, the lode is producing good stones of ore. In the winze sinking below the 22 fm. level, the lode is without any important alteration—still producing some saving work.—T. Richards: August 17.

GREAT WHEAL MARTHA.—Thomas's shaft has been sunk to the depth of 23 fms. 1 ft. 6 in. below the surface, or 20 fms. under the adit; at the depth of 10 fms. a cross-cut has been driven south 5 fms., at which point the lode was intersected, and a level driven east on its course about 55 fms. In consequence of impure air, I was not able to examine the character of the lode more than about 40 fms., which varies in size from 4 to 6 ft. wide, chiefly composed of capel and mundic, with a small quantity of copper ore intermixed. A level has also been driven west on the course of the lode about 100 fms. In consequence of small crushed ground, I was not able to examine the character of the lode the whole length driven on; but so far as I could see it, I found the lode to be from 4 to 8 ft. wide, composed chiefly of capel, mundic, and quartz, with a small quantity of copper ore intermixed. Within the length of 25 fms. west of the cross-cut, the lode contains very promising indications, and has yielded many tons of copper ore. At the depth of 20 fms. below the adit, a cross-cut was driven south 4 ft., and intersected the lode; a level has been driven east on its course 54 fms., and found to be from 4 to 5 ft. wide, composed chiefly of capel and mundic, with a small quantity of copper ore intermixed, there being no visible alteration in its character from the level over. A 20 fm. level has been driven west 62 fms. on the course of the lode, and found to be from 6 to 10 ft. wide, composed of capel and mundic, with a small quantity of ore intermixed; the lode for 25 fms. west of the cross-cut contains good indications that it will be found productive for copper ore when laid open at a deeper level, but is not so productive at this level as might reasonably have been calculated on, judging from the promising appearance of the lode in the 10 fm. level over. The new engine-shaft has been sunk 40 fms. below the adit, from which a cross-cut has been driven south about 20 fms., and intersected the lode, on the course of which a level has been driven east about 3 fms., and found to be about 4 ft. wide, composed chiefly of capel, with mundic and copper-ore intermixed: this end being about 25 fms. west of Thomas's shaft, I would recommend its being continued a sufficient distance to prove the lode under where found so promising in the 20 fm. level, which I calculate would require about 20 fms., and the price 5*l.* per fm. A 40 fm. level has been driven west on this lode about 3 fms., which is about 5 ft. wide, composed of capel and mundic, with a small quantity of copper ore intermixed: from the great sameness of the character of the lode in this end, and the level over, I would recommend the driving at this point being suspended for the present, and the sinking of the engine-shaft resumed immediately, and to be sunk 20 fms. before again intersecting the lode: I calculate the cost to be about 350*l.*, and the time seven months. The cross-cut to the lode at this depth (60 fm. level), would be about 10 fms., at about 6*l.* per fm., which would occupy from two to three months at this depth. I calculate, from the indications contained in the lode already laid open, that it will be found sufficiently productive to warrant the shaft being sunk to a much greater depth.—James Seccombe: August 9.

GREAT WHEAL MARTHA.—In the 40 fm. level west we are now carrying 5 ft. of the north part of the lode, which is composed of capel, mundic, and spar, with spots of ore; the lode in the eastern end is still divided by the horse of killas; we are carrying the south part, being 5 ft. big, 2 ft. of which is composed of mundic and spar, with copper intermixed, and the remaining part capel, with spots of ore; we have also on the north part of this a branch of white iron, about 2 in. big, spotted with lead, and very much of the same appearance as in the 10 and 20 fm. levels, where we had the mundic and copper; this end has now a more favourable indication than I have seen it present since we first commenced driving. We still keep the water nearly to the 70 (old mine), although the top water has greatly fallen off. Mr. Thomas and Mr. Johnson were here on Monday last, and the latter underground.—T. Penaluna: August 14.

GUNNIS LAKE.—At Chilsworthy, the lode in the 25 fm. level, east and west of Bailey's shaft, is without alteration. We continue to drive north of the 12 fm. level west.—W. Richards: August 17.

GWINEAR CONSOLS.—We commenced rising in the ore ground on Wednesday last—up at this time, 2½ fms. of ore, about 3 ft. wide, and I think of better quality than we have had it; this is on the north part of the lode. We have also risen 2 fms. above the slide, on the south part of the lode, which is similar to the 37 tons parcel sold this week—ore, mundic, and gossan, saving work, about 18 in. wide. We are preparing to drive east of Barrett's shaft, on Haywood's lode, and shall commence driving the early part next week. We have an improvement driving east on Tredinnick's lode; the lode is now more than 3 ft. wide—all saving work for tin. It is not fairly tested yet; but I think is worth 2s. 6d. the sack of 12 gallons.—Hugh Stephens: Aug. 14.

HAWKMOOR.—The lode in the 15 fm. level, east of Hitchen's shaft, is about 2½ ft. wide, composed of capel, mundic, and spar, with good stones of ore occasionally.—P. Richards: August 17.

HEIGNSTON DOWN CONSOLS.—The lode in Bailey's engine-shaft is 3 ft. wide, composed of gossan, spar, and tin—saving work. In the 20 fm. level east, the lode is 4 ft. wide, producing saving work, and very promising; there has been no lode taken down in this level west. The ground in Buddle's adit is favourable.—W. Richards: August 17.

HERODSFOOT.—The 62 fm. level north is extended about 40 fms. from shaft; the lode in the end is 1 ft. wide, worth 15*l.* per fm; this level is extended south about 36 fms. from shaft, where the lode is small and poor at present. The 72 south is about 40 fms. from shaft—lode 18 in. wide, worth 22*l.* per fm.; there is a pitch working behind this end at 35s. per ton, and men getting fair wages. The end north, in this level, is extended 35 fms.—lode 1 ft. wide, worth 6*l.* per fm.; the two pitches working in the back, behind this end, are looking well. The 82 fm. level south is driven 5 fms.—lode from 2 to 3 ft. wide, worth, on an average, 20*l.* per fm.; in the end it is 1 ft. 6 in. wide, worth half a ton fur lead per fm.; the end north is driven 4 fms.—lode cut through about 2 fms. behind end, worth 7*l.* per fm. The mine, on the whole, is looking well, and would pay dividends immediately, if the work could be got to surface; but the drawing-machine has not power enough, and is wanted for a crusher. The captain informs me (which I should think is correct), a 35-ft.-water-wheel can be erected, with a good stream of water, and I would advise your doing this immediately. I find the ore ground is now about 80 fms. long, and good going north and south; if this continue (which is at present likely), I have no doubt of the mine paying large dividends.

HERODSCOMBE.—The adit level is driven south 28 fms. from the shaft; the lode in the end is promising—2 ft. wide, composed of gossan, spar, capel, and flookan, with good stones of lead; this level is extended north about 40 fms.; in the last 4 fms. driven the lode is disordered, in consequence of a slide—but I have no doubt, in driving further to hill, it will get in settled ground, and probably make ore; from the cross-cut, to within 10 fms. of the end, most of the back that will pay for working is taken away; the lode in the stopes, about 6 fms. behind the end, is 2 ft. 6 in. wide, producing ore that will pay expenses, but not rich; the lode throughout the level is of much the same character. Some men have been stoping the bottom of this level about 15 fms. behind end; also, bottom south of cross-cut—but in consequence of the water, they cannot go more than about 4 ft. deep. This is abandoned for the time; here the lode is 2 ft. wide, producing good stones of ore—but I cannot find it is much better than the back. From the nature of the lode, I shall expect in the next level a course of ore; this will be proved in about two months.

HOLMBUSH.—The ground in the diagonal shaft, sinking below the 120 fm. level, is still favourable; the lode in the 120 fm. level, west of the great cross-course, is 20 in. wide, composed of capel, mundic, killas, and stones of ore. We are just now in a position to commence sinking the winze below the 110 fm. level—having, during the past week, fixed dams, tackle, &c., for that purpose; the lode in the rise, above the 110 fm. level south, is 2 ft. wide, composed of fluor-spar and lead, worth 10*l.* per fm., and promising a further improvement; we are apparently getting into the neighbourhood, where we may reasonably expect to meet with a more productive lode than heretofore, judging from present appearances; we have three pitches at work in the back of this level, which are yielding a fair quantity of lead, especially one of them, which at present is very productive. We hope to set our large stamps in motion next Thursday, to stamp the copper halvans.—W. Lean: Aug. 17.

ILAM.—The ground in Robins's shaft is favorable for sinking; we here carry about 3 ft. of the lode, and get a little copper at times. The lode in the 67 fm. level, east of the shaft, is not without copper. We have driven on the cross-cut towards Brown's shaft about 5 ft. since I wrote last.—J. Sprague.

KIRKCUDBRIGHTSHIRE.—Stewart's shaft, in course of sinking, is 8½ fms. under the 40 fm. level; the lode in it is 2½ to 3 ft. wide, and greatly improved (the last day or two), the lead having extended back to the east end of the shaft, producing about three-fourths of a ton per fm.; the ground has also become easier for sinking. The lode in the 40 fm. end west is 4 ft. wide, and producing 2 tons of lead per fm. The lode in the 30 fm. level end west is large, upwards of 4 ft. wide, but not so good—worth from 4*l.* to 5*l.* per fm. The lode in the 20 fm. end west is 2 ft. wide, producing 1 ton of lead per fm.; the stopes in the back of this level are worth about 6*l.* per fm. The winze sinking under the 30 fm. level, west of shaft on the junction, is yielding about 1 ton per fm.; the winze sinking under the same level, east of shaft, having become poor, we have thought best to put these men to drive west, and stope the lead through which this winze has been sunk. Having cleared the stuff in the three levels going west, we now propose to set some stopes in the back of the 30 fm. level; and in the meantime clear the stuff from the stopes on the junction and other parts of the mine, which will require about three days to do, independently of what we are breaking. We have just now shipped 30 tons 19 cwts. of lead ore, per the *Mary*, for the market.—J. Buzzo: August 14.

LLANCYNFELIN.—According to Mr. Johnson's instructions, I beg to hand you the report of these mines. With respect to the ground opened in the main lode there is not any left standing that will pay for breaking down, with the exception of what is already working in the back of the 8 fm. level, by two men, at 5*l.* per ton; at this point there was a good lode for about 15 fms. in length, occasioned by three branches falling together. The 18 fm. level is driven on the course of the lode about 160 fms., and very poor indeed, varying in size from 4 in. to 3½ ft. in breadth, and cross-cut at right angles, sufficiently to prove that there are no more branches in connection with the lode; on going west the lode is disordered by a slide course, and, consequently, lost, or rather not discovered, to the west of this slide—here I should not recommend any more outlay; in the 18 fm. level I think it would be well to extend the eastern end from Johnson's winze, under the old men's workings, to see if there is anything gone down in that direction. On examining the lode on Jenkin's adit I find the lode to be about 2 ft. wide, composed of spar, prian, and good stones of ore; there are also two middle lodes, which form a junction with this lode, all underlaying towards Fearon's shaft, which is a point of great importance, and ought to be prosecuted with all possible force; I should propose sinking Fearon's shaft to the 20 fm. level, and cross-cut to the nearest lode, then extend levels on each as should be then thought advisable. Jones's adit is driven about 70 fms.; and, in order to cut Jones's lode, there are about 120 fms. more to drive, which will leave a back of about 18 or 20 fms.; in passing this distance, it is expected to intersect two other lodes, which have not yet been wrought upon; the ground in this cross-cut is very favourable for driving—this, I consider, a fair speculation, and worthy of a trial. I have carefully examined all the stamp stuff being on the mine, and should consider it would pay for stamping, and leave a small profit. It has been represented by the farmer of the estate that an important discovery was made some years since in ploughing the land; and, as we have an intimation as to the spot, I should deem it essential to trench in this spot, as well as to the north of Fearon's, where there are lodes possessing good indications; this would be attended with but little expense. In conclusion, I beg to remark, that the machinery is well adapted for exploring the mine to a considerable depth, and in a position suitable to command the operations at Fearon's.—E. Rogers.

LEWIS.—The 60 east is continuing to look very well—this is, I am glad to tell you, something very promising; I have now some beautiful stones of tin, which I just brought up from this end. The 50 east, on south branch, is also looking very well. The 50 and 40 are much the same as when last reported. The 20 east, which is nearly under Praed's shaft, is very much improved, worth 8*l.* per fm., and very kindly—driving at 27s. per fm. The lode in Praed's shaft, sinking below the 8 fm. level, is 2 ft. wide, producing some tin, and very kindly. All other places are much the same as when last reported.—S. S. Noell.

SOUTH TAMAR UNITED.—The water is forked 5 fms. under the 50 fm. level. We are preparing to drop 6 fms. to-day, which I hope we shall succeed in doing. The men in the adit are getting on clearing and securing very satisfactorily.—B. Robins: August 17.

SOUTH WHEAL MARIA.—Since the last meeting, the cross-cut north in the 20 fm. level, has been driven 14 fms., and we calculate there is about 16 fms. more to drive, to intersect the next lode north, on which a shaft has been sunk 4 fms. on its course, opposite the cross-cut, underlaying north about 6 in. in a fm.; the lode varying in size from 18 in. to 2 ft., composed of mundic, spar, and gossan, with spots of yellow ore and tin—I have great confidence, from its appearance in the back, which has been seen for a great length, that it will be found productive in depth: 7 fathoms from the shaft, we discovered a lode 18 in. big, without any underlay, composed of mundic, spar, &c., with pretty much yellow ore in the capel; and about 9 ft. further north, we intersected, it would appear, another lode, from 18 in. to 2 ft. big, underlaying towards the east lode about 1 ft. in a fm., composed of spar, mundic, &c., with very strong yellow ore in the capel. These lodes, it appears, will come together by sinking the engine-shaft 10 fms. deeper, where it is more than probable we shall find them productive. The south cross-cut is driven 11 fms. from the shaft, where we have intersected a lode, from 18 in. to 2 ft. big, underlaying north about 2 ft. in a fm., similar in appearance to those named in the north cross-cut; there has been about 9 ft. driven west on its course this week, which have yielded some good yellow ore—continuing its size, underlay, &c. The caunter in the wheel-pit, and near the smiths' shop, from its course, would be intersected by continuing to drive west about 10 fms. on the lode south of shaft, which has a pretty appearance in the adit level, with spots of copper ore, Should the 20 fm. level be extended west on the course of the lode, to the caunter, and then driving on its course, which would be south-east, I calculate the south lodes would be reached in less time, and also at less expense, than continuing the cross-cut; but this, of course, will be for the consideration of the meeting. While employed a few days since securing the Weir, we discovered a good orey lode in the bed of the river, about a foot big, in a line with the south lode; from the appearance of this in the back, I have great confidence that this lode, in the flat ground in the hams, will be found productive between the caunter and the river, as pretty much ore has been found in the back in gossan, by extending the adit level on its course west. The Weir has been secured through the summer, which we hope will now stand against the floods in winter, and the wheel at present appears to be capable of drawing double the quantity of water we now have.—G. Francis: August 14.

TAMAR SILVER-LEAD.—In the 160 end, south of the shaft, the lode is 3 ft. wide, saving work of a coarse quality; in the same level, north of ditto, the lode is 18 in. wide, producing good stones of ore. In the 145 end south the lode is small and poor; in the same level north the lode is 2 ft. wide, rich work; in the winze, sinking as a pitch, in the bottom of this level, the lode is 2½ ft. wide, rich work. In the 135 fm. level the lode is 1 ft. wide, 6 in. of which is very rich work. In the 125 fm. level the lode is 2 ft. wide, good saving work. At the north mine, in the 70 cross-cut, we have no important alteration since our last. In the 60 fm. level the lode is 2 ft. wide, composed of capel, can, and ore, good stamp-work. We sampled, on the 6th inst., 93 tons of rich silver-lead ores.—J. Sprague: August 16.

TRELEIGH CONSOLS.—In the 110 fm. level, east of Christoe's, lode 20 in. wide, rather improved in appearance, with stones of ore. In the winze, below the 100 east, lode 18 in. wide, worth 4*l.* per fm. The 100 cross-cut, north of Garden's, is driving north to the lode. In the rise, above the 90 west, lode 1 ft. wide, with stones of ore only—not to value. In the winze, below the 80 west, lode 2½ ft. wide, worth 10*l.* per fm.—the water is drained in this winze, so as to allow us to sink; in the 80, east of Garden's, lode 8 in. wide, worth 10*l.* per fm.—this is still on the branch. In the 70, west of ditto, lode 14 in. wide, more promising, with stones of ore. In the 60, west of ditto, lode 8 ft. wide, of a more promising nature, with stones of ore. In the adit east, on Wheal Parent lode, lode 2 ft. wide, spar and mundic, with stones of ore; in the shaft, below the adit, on Wheal Parent lode, lode 20 in. wide, worth 4*l.* per fm., looking promising.—W. Symons: August 14.

UNITED HILLS.—The bottom of the 90 fm. level, west of Williams's, is stoping—lode 2½ ft. wide, worth 28*l.* per fm.; the back of the 90, west of ditto, is stoping—lode 2½ ft. wide, worth 20*l.* per fm. At Wheal Sparrow, in the 40 fm. level, west of James's shaft, the lode is 18 in. wide, worth 3*l.* 10s. per fm. The 30 fm. level east, on Stacey's lode, with the back and bottom, at 5s. tribute—lode 2½ ft. wide, worth 14*l.* per fm. In consequence of Williams's engine stopping on Saturday last, to allow the sumpmen to do the necessary shaft work, the water has not been in fork since, but expect it will be by to-morrow morning.—T. Trevenen; R. Williams: August 14.

WEST WHEAL JEWEL.—In the rise in the back of the 70 fm. level, west of Hodges's cross-course, on Wheal Jewel lode, the lode is not taken down in the past week—risen last month, 2 fms. 6 in. In the 80 fm. level, west of Quarry shaft, on Tolcarne tin lode, the lode is 15 in. wide, worth 5*l.* per fm.—driven last month, 3 fms. 4 ft. In the 12 fm. level, west of Quarry shaft, on same lode, the lode is 15 in. wide, worth 9*l.* per fm.—driven last month, 1 fm.; the 12 fm. level, east of Rowe's winze, on the same lode, is communicated to the little cross-course, driven north from the old sump-shaft in the past week—driven last month, 3 fms. 2 ft.; in the stopes, east of Pryor's winze, in the bottom of the adit, on the same lode, the lode is 2 ft. wide, worth 20*l.* per fm.—stoped last month, 6 fms. The sumpmen driving the 100 fm. level west, on Wheal Jewel lode, drove last month 1 fm. 1 ft. The stopes, east of Quarry shaft, in the bottom of the 12 fm. level, on Tolcarne tin lode, is stoped 6 fms. 2 ft.; the stopes east of Quarry shaft, in the back of the 12 fm. level, on the same lode, is stoped last month 7 fms. 2 ft.; in the adit end, west of Quarry shaft, on Tolcarne tin lode, the lode is worth 6*l.* per fm.—driven last month 2 fms. 1 ft.—R. Johns; T. Bray: Aug. 16.

WEST WHEAL MARIA.—The lode in the 38 fm. level, west of the eastern shaft, is much the same as last reported, 3½ ft. wide, producing good stones of ore; the lode in the western engine-shaft is about 3 ft. wide, with spots of ore in places. In the 54 fm. level, east of this shaft, the lode is about 18 in. wide, composed principally of ore; in the cross-cut south, in this level, there is no important alteration.—T. Rodda: Aug. 17.

WHEAL ADAMS.—You will perceive, by the setting-report, which accompanies this, that we have resumed rising in the back of the 50, on the western lode, and have commenced another rise in the same level to reach the deposit of blende, the richest part of which is about 5 fms. above the back of the level. The lode in the winze, sinking in the 40 fm. level, is 3 ft. wide, containing stones and spots of lead ore throughout; it has not yet produced much ore, but the indications are good, and the lode is evidently improving in depth; the lode in the 40 fm. level south continues large, hard, and wet, but it produces a small quantity of ore of good quality. The lode in the 28 fm. level south is also large, and producing saving work. The level extending south, on the eastern lode, is in very soft ground, with favourable indications, and good stones of lead; no alteration has taken place in this level, driving north of the old engine-shaft. We regret that several of the pitches are at present idle, and will remain so till the arrival of miners from the western part of the county. We expect to sample a parcel of lead ore the latter end of this week. The masons are still engaged building the crusher-house, which would have been completed ere this, but for heavy rain, which fell here last week several days successively.—J. Prince: August 17.

WHEAL BLENCOWE.—In the back of the 10 fm. level, south of the engine-shaft, the lode is about 15 in. big, fair work; the winze, in the bottom of the 10 fm. level, is holed to a rise in the back of the 26; the men are now employed here in breaking down the lode from the bottom of the 10, which is about 2 ft. wide, good saving work; we have recently opened a little on the east and west branches in the 10 fm. level—it has produced some excellent specimens of tin; it is about 20 in. wide, good work. In the course of a day or two, we shall have a communication from the 10 fm. level to the new shaft, and shall at once commence to stope the backs on tribute, which will pay very well. We also intend to drive an end north from the new shaft, on the course of the north and south lode. Judging from the appearances of the underlay of the east and west lode, which we discovered in the old men's workings, we cannot have many fathoms to drive to intersect it; the ground is very favourable for driving—men can get fair wages at 16s. per fm. As we have had no means for the last two months of stoping our back conveniently, for want of proper ventilation, we have only kept about nine heads of our stamps working. The quantity of tin for the two months amounts to 3 tons 5 cwts., which is of good quality. In the course of one month the mine will be in a regular way of working, our stamps will have a full supply of work, and our returns of tin will naturally increase.—John Dale: August 18.

WHEAL MARY ANN.—The lode in the 30 fm. level, south of Barratt's shaft, is 2½ ft. wide, and worth 15*l.* per fm. In the 15 fm. level south, it is 2 ft. wide, and worth 7*l.* per fm. All the stopes are looking well. Pollard's shaft is sunk 9½ fms. under the adit level. We sampled on Friday last two parcels of ores; the crop is computed 34 tons, and the gossan 21.—P. Clymo, jun.

WHEAL SETON.—In the 90 fm. level east, on Bull's lode, the lode is 1 ft. wide, composed of mundic and spar; we have intersected the cross-course here, and are now cutting through it; when this is done we shall drive north on it, to cut the north and south caunters, and resume sinking Bull's shaft below the 90 fm. level. In the 80 fm. level west, on the south caunter, the lode is 5 ft. wide, worth 20*l.* per fm. In the 70 fm. level west, on ditto, the lode is 4 ft. wide, containing stones of ore; the stopes in the back of the 60 fm. level, west on ditto, are worth 30*l.* per fm. Since our last account we have commenced a cross-cut north, from the south caunter in the 50 fm. level, to Tilly's shaft, and we expect to communicate to this in about 12 months. In the 80 fm. level west, on the north caunter, we are carrying about 10 ft. of this lode, which is worth 120*l.* per fm.; the stopes in the back of this level are worth 130*l.* per fm. In the 70 fm. level west, on ditto, the lode is worth 80*l.* per fm.; the stopes, in the back of this level, are worth 150*l.* per fm. In the 60 fm. level west, on ditto, the lode is worth 120*l.* per fm.; the stopes in the back of this level are worth 150*l.* In the 50 fm. level west, on ditto, the lode is 4 ft. wide, composed of spar, mundic, and stones of ore; the lode in the rise in the back of this level is 2 ft. wide, unproductive, and has been so for the last 6 ft. In the 70 fm. level west, on Kneebone's branch, the lode is 2 ft. wide, worth 8*l.* per fm. The 60 cross-cut has been driven north of north caunter, about 80 fms. The ground in Tilly's shaft is still favourable; and we expect to sink to 50 fms. below the adit in about two months. We shall complete Cock's engine-shaft to the 24 fm. level below the adit by the end of the present week.—P. Rabey; S. Lean: August 10.—[We published, in our last Journal, the particulars of the accounts presented to the meeting on the 10th inst., at which also the above report was read.]

WHEAL TRELAWNEY.—The lode in the 42 fm. level, north of Phillip's shaft, is 3½ ft. wide, worth 18*l.* per fm.; the lode in the same level south is 2½ ft. wide—worth 15*l.* per fm. The lode in the 32 fm. level, north of Phillip's shaft, is 2½ ft. wide—worth 12*l.* per fm. All the stopes are looking well at Phillip's shaft. The 52 cross-cut is driven 6½ fms., and we expect to cut the lode in about a fortnight. At Trelawney's shaft, in consequence of breaking the windbore, casing and dividing the shaft, little has been sunk since last report. Vivian's shaft is sunk 2½ fms. under the 20 fm. level, in favourable ground. The lode in the 20 fm. level is 4 ft. wide, composed of gossan, cann, and good stones of lead.—P. Clymo, jun.: August 16.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

A correspondent informs us, that on the lands of Baldwin Tulford, Esq., at Dunsford, near Exeter, a mine is just opened by Capt. Moyle, where there is a good bunch of copper ore in sight, at 6 ft. from surface, and which he thinks not improbable may equal the Great Wheal Maria.

Callington.—I have visited these mines and seen the Kelly Bray lode, and it is looking extraordinarily well; they are breaking some excellent saving work; at the next level you may look out for a mass of copper, for I fully anticipate it.

The Caradon and the Phœnix Mines are making but slow progress; there are but few men working in each, and I learn that a discharge of men will again take place in the Phœnix—this I much regret, for the adventurers have been persevering, and carried on the operations with much spirit.

The Dyfngwm Lead Mine (in Montgomeryshire) worked upon the Cost-book System, is situate near the summit of a ridge of mountainous ground, half-way between Machynlleth and Llanidloes—the turnpike-road passing within a few paces of the sett, which is 200 ft. above the level of the shipping port of Derwent-las, on the river Dovey, three miles below Machynlleth, and immediately to the west of Esgair-galid and Delivé—the former in the possession of Messrs. Pugh and Williams. In Dyfngwm Mine the lode, which has been recently attached, is the Delivé vein, about 4 fms. to the south of the Esgair-galid lode, as seen in Cyfarthfa, and which is of great width—say, 30 ft.—rising up from the bed of the brook in great strength of crystallisation, and yielding very fine ore. The fact of this lode rising from the bed of a brook, proves what was 70 years ago stated by the celebrated Whitehurst, in his excellent treatise on the Derbyshire lodes, running under, and parallel to, the streams in that locality—namely: "That lodes so situated will be found charged with ore in depth, much more solid in its nature, and of much greater extent in deposit, the deeper it goes; and, therefore, the most likely to repay the adventurers their outlay, and leave a handsome surplus for a long series of years."

At East Crowndale they have already on surface a good pile of copper ore from a north lode, unexpectedly intersected about a fortnight since in the shaft, which is improving in depth; this week, a tin lode, 3 ft. wide, has been cut, and some capital work broken, and it is likely to be very rich—two other tin lodes run within about 3 fms. of the one just cut. The engine-shaft will be down in 6 fms. more sinking to 50 fms., at which depth it is intended to cross-cut to take the main, or Crowndale copper lode, formerly so extremely productive. The prospects at this mine are very good.

East Alvenney.—This mine, if the lodes continue as at present, will very shortly be working to a good profit, as every place they have cleared up exhibits good stones of tin. They have two lifts of pumps at work on two distinct lodes, each producing excellent stamps-work; and on the same lodes, farther east and west of the shafts, they are breaking excellent work—stones of solid tin, from 7 to 10 lbs. weight, which they are dressing by wire seives, and will sell for grain tin.

Holmbush is looking very gloomy; and unless they have a sudden and unexpected change, she will not be able to keep up her samplings.

Lamerhoge.—This mine, of which so much has been said, and so much money expended in shoding and driving shallow, and almost useless, levels, is now looking very gloomy, for the agent has received instructions to suspend the sinking of the engine-shaft; if they do not go deeper, and spend much more money, they will not pay dividends from their present levels. I presume the King-street committee would not object now to their agent setting a tribute pitch without consulting them.

Marke Valley.—This mine has considerably improved, and, I think, will ultimately make a good and lasting mine.

North Wheal Friendship.—They have a good pile of tin broken, and are still breaking good stamp work, which they will commence dressing shortly.

North Roskear.—I find they have a very pleasing and important discovery at North Roskear. If you recollect, Wheal Seton drove their lode into North Roskear sett, and the agents of the latter mine drove their 60 fm. level on upon a wrong branch; but in the 70 fm. level, they have intersected the lode, worth 90*l.* per fm. So the manager informed me yesterday.

South Callington.—Preparations are being made here for the erection of a water-wheel, without which nothing more than driving the adit can be done. They have water sufficient for all purposes during the greater part of the year; the timber for a 40-ft. wheel is on the mine, and arrangements are making for sinking the engine-shaft. In addition to the parcel of lead recently sent to London, they have sampled and sold several tons of manganese.

South Friendship Wheal Anne.—They have forked the water to the bottom, and they have a very kindly lode in the 52 fm. level, composed of lead, felspar, fluor-spar, prian, blue peach, large stones of mundic, and bright yellow copper. The lode is about 4 ft. wide, underlaying north about 2 ft. in a fm., with two smooth, regular walls; the capel of the lode carries good work for tin. They have sampled, and got on the floors, about 20 tons of ore.

Trelleigh Consols.—In the 80 fm. level, west of Garden's shaft, an improvement has taken place since the weekly official report; and in the 100, going west, the lode having a northerly underlay, they have now about 6 ft. to drive to intersect the lode, to which the shareholders are looking with interest.

Wheal Sampson.—Here they have a splendidly-looking lode, although not yet rich for minerals—it is 4 ft. wide, underlaying about 2 ft. in a fm., composed of very rich gossan, shale of micaceous substance, fuller's-earth, carbonate of lime, a great deal of barytes and white iron, spots of very rich copper, and silver-lead; and on the foot wall there is a branch of blue flookan, impregnated with white mundic. On the hanging wall there is a branch of yellow flookan, impregnated with antimony, and what they term bismuth, much like antimony, and a great deal of prian and beautiful spar. The walls of the lode are quite smooth and regular.

West Wheal Treasury.—I am happy to inform you that the mine is looking much better—they have a good lode in the 50 fm. level east, worth 12*l.* per fm.; the 50 west is much improved, but nothing in value for copper ore at present. The 40 end east is idle, and cross-cutting to intersect the south lode, and they expect to cut it shortly. The 30 east is a good lode, and worth 10*l.* per fm. The adit, and 20 east, in tin lode, are looking pretty cheering.

UNITED MEXICAN MINING ASSOCIATION.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—False impressions create false alarms, and, as the letter of your correspondent of the 4th inst. is calculated to alarm distant shareholders, I cannot let it pass unnoticed. I leave him in your hands, to answer that part which has reference to your observations, merely stating my opinion that they were founded on facts and justice, and proceed to answer his misrepresentations. He says, that the company, after 23 years, has only paid the paltry dividends of 7s. 6d. and 5s.; now, he ought to know that they have paid off 61,277*l.* auxiliary capital and bonus, 44,785*l.* red scrip, besides paying the above dividends to the original shareholders, as well as upon the shares created in the hour of need, to carry on the operations of the company. If your "Subscriber" has been a shareholder as I have been for 23 years, he must know that the association was only saved from bankruptcy by the firmness and energy of the directors, and the able management of Mr. Shoolbred, in Mexico; by their united efforts, the concern has been saved; and this leads me to remark on the ungenerous observation he makes in allusion to the piece of plate presented to the latter gentleman; "Subscriber" has no right to find fault, because it was the act of the *shareholders* themselves; and, with regard to the unclaimed dividend fund, he has no more right to meddle with that, than he has with the money in my pocket. To pay a 5s. dividend would require 10,793*l.*; and, again, he has no right to assume that only 9000*l.* would be demanded. It is really surprising that men should know so little, and expose that little in the way that "Subscriber" does; for, in addition to his indirect attack upon the directors respecting the plate, he says, "quicksilver was also shipped just before the meeting, which reduced the balance to 15,000*l.*" If he would read the reports of the manager in Mexico, he would see how his operations have been retarded by the want of it; and, if he could recollect the financial statements presented to the shareholders, he would know that the profit on shipping quicksilver has been very considerable.

If he is a man of business, he should also know that the papers and documents of the association are voluminous and valuable, and could not be lodged in an office rated at 40*l.* or 50*l.* per annum. I would recommend "Subscriber" to sell his shares; or, if he wishes to keep them, not depreciate their value by throwing doubt and discredit upon the management and statements of the directors, because it is beyond dispute that, in the changes which took place, consequent upon the return of Mr. Shoolbred from Mexico, they effected a saving of 200*l.* a year. I beg to apologise for thus trespassing on your valuable columns; but it is quite bad enough to see our property depreciated by events abroad, and scarcity at home, without adding to it by misrepresentations.

London, Aug. 18. An Original Subscriber.

GREEN VALLEY MINE.

Sir,—Can you inform me, when the final dividend on this mine is going to be paid? Mr. Crouch, of West Caradon, has a large sum in hand for the purpose; but, in consequence of Mr. Skewes not having paid his last call, made more than two years ago, I believe he refuses to settle. The dividend would be 25s. or 30s. per share, and would now be very useful to many of the unfortunates taken in by that speculation.—A Sufferer: *London, August* 18.

[We believe Mr. Skewes reaped a large sum of money by the speculation; and, if he has not paid his call, we would recommend the adoption of legal measures for its recovery. Should a settlement not take place within a few weeks, upon hearing again from "A Sufferer," we can further advise him upon *this* matter.]

LLANCYNFELIN MINING COMPANY.

Sir,—From the report of the meeting of this company, inserted in your paper of last Saturday, it appears, that the agent of the mine was dismissed, "because the representations he had made to Mr. Johnson had not been borne out." This, upon the face of it, appears a most wholesome regulation, and I for one should be glad, indeed, to see it more frequently acted upon; but will Mr. Johnson allow me to ask, whether the so-called deception, in the present instance, is a thing just discovered, or whether it was not matter of conversation in the mine market months ago? That *some* of the shareholders have been deceived, I doubt not, but cannot conceive that *all* have. Perhaps, Mr. Johnson will inform you what has become of the "dismissed" agent. I hope he has not been made the scapegoat of others worse than himself. Mr. Johnson further says, that "after 30 years' experience in the prosecution of lead mines, he had been misled. Does he mean to say for the first time? If so, may I ask if the reports of Silver Valley, published in your Journal of March last, and making out the lode worth 150*l.* per fm., were not sent to London by Mr. Johnson; and whether copies of them were not given from Finsbury-square to parties, who circulated them in the market, as coming from Mr. Johnson? If Mr. Johnson was not "misled" here, I was; and it was not until the "call" came that my eyes were opened. Argus.

Cornhill, August 17.

LLANCYNFELIN MINES.

Sir,—The news that the Llancynfelin Mines are about to be abandoned has just reached us, and I cannot but express that it is a matter of great regret to every owner of mineral property in this county, to know that a spirited company of London gentlemen have expended 12,000*l.* or 13,000*l.* upon one of our mines without any remunerating return, or any prospect of being repaid for their outlay; and this regret is increased, by a fear that the losers will scarcely venture again into our remote region. I would, however, wish it to be borne in mind, that the Llancynfelin Mines, if they deserve the name, were well known to the experienced miners of this district to be miserably poor, and were condemned by all the best Flintshire and Cornish mine agents, who ever visited our county. They always said that they were out of the range, or line, of the productive mines, and would never produce much ore. It seems a pity, and rather strange too, that the London capitalists did not seek some good local advice, ere they rushed into this great outlay of their money—for surely, amongst some of the Cornish mine agents, now long resident in the neighbourhood, a sound opinion might have been obtained.

I am told, that these persons have been vastly entertained at the reports and prophecies published in your Journal, of lodes, and courses of ore, and monthly samplings, sent to you by wise men from other districts; and they would gladly (they say), had it been their business, have communicated the contradictions to these reports, which the working Cornish miners have constantly spread abroad. Surely, the spirited Llancynfelin Company will not desert our favoured county, because a roguish agent put all the best lumps of ore on the outside of the heaps, and made his masters believe that 14 was 140 tons, and wrote reports upon the underground works, that no one here would credit. On all hands, the shareholders' fate is greatly pitied; but it is hoped that they will again try their luck amongst us—and by seeking counsel from those learned in the craft, who have a knowledge of our rocks, and lodes, and veins, that they may regain their present losses, and that our district may recover its damaged reputation. A Cardiganshire Landlord.

Aberystwith, August 17.

COOMBE TIN MINE.

Sir,—It would appear from the letter of "D.," in your last publication, in respect to the Drake Walls Mine, that the anonymous writer of the "Coombe Mine caution," has got himself—as my friend Cobden used to say—into a pretty considerable fix; and how he is to get out of it, I cannot imagine. When I first read his private announcement, I immediately concluded that it was a new version of old *Æsop's* fable of the "Fox and the Grapes;" but I never could have supposed that "Cousin Jackey" would have committed himself so sadly, as publicly to assert as truth what is notoriously false. Such is, however, lamentably the case; and now that the semblance of his veracity is entirely demolished, by the proofs afforded by "D."—that "the ancients did not rake the Drake Walls Mine below 28 fathoms, instead of 90 fathoms deep," I do not think that either his advice or his opinion will be deemed worthy of one moment's further attention on the part of the public.

The question about the Coombe Tin Mine may, therefore, rest on its own merits; and, in the prospect of a profitable adventure, the proprietors may charitably allow "Cousin Jackey" to retire to Coventry, since he can no longer screen himself from the shafts of ridicule behind the *walls* of *Drake* Mines or hide himself effectually in the shallow drifts of the ancients, among the other mines of the Dartmoors. For the future, however, I would counsel him to take honour for his guide, and, in thinking of "sour grapes," to remember that "good wine needs no bush," and "a good mine no puff."—Fair Play.

London, August 18.

TIN BOUNDS.

TO THE EDITOR OF THE WEST BRITON.

Sir,—Your correspondent, who signs himself "A Tin Bounder," [see *Mining Journal*, August 7], appears rather to mystify the question of bounds, than to meet it fairly.—What are tin bounds? If I am rightly informed, they are setts, or pieces of ground, marked out for the purpose of being worked for tin, which, if they be so worked, and not left unworked for the space of 12 months, the landower could not prevent the bounder from working, provided the latter paid to the former a 15th dish, or part of the tin that might be raised.

In the case referred to, of Rogers *v.* Brenton, the defendant, I believe, pleaded his right to take the tin under authority from the landlord, because the plaintiff (the bounder) had neglected to work. I believe that nobody disputes the legality of tin bounds, provided the bounder continues to work the ground fairly, and pays the required dues to the landlord.

Now, it is well known that the bounders have a custom of going annually and turning up a turf at the several corners of the sett or bounds, which they contend is sufficient to keep possession against all others. This claim of the bounders, provided it were admitted to be good, would tend to prevent ground from being worked, instead of giving that encouragement to tinners which the original grant under the stannary laws was intended to promote. T.

Falmouth, August 10.

MINERAL RESOURCES OF NEW MEXICO.

Sir,—In reply to your inquiries, as regards the mineral wealth of this territory, the situation of the mineral regions, &c., I cheerfully send you the information I have been enabled to obtain during my residence in the country—a period of some 20 years.—Manuel Alvarez: *Santa Fe, May* 4.

New Mexico is a part of the ancient province called by the Indians "Cibola." It was called New Mexico, in consequence of the reports of various Spanish adventurers, who visited it before the conquest, and described the aboriginal inhabitants and the mineral wealth of the country to be similar to those of Mexico. The first conquerors discovered mines of the precious metals in nearly all the mountains of the country, and wrought them industriously and profitably. The indications of their labours are yet to be seen in many places. The first settlers having been expelled or destroyed by the Indians, the country was conquered and settled a second time by the ignorant and poorer classes of people from Zacatecas, and other southern cities, who possessed neither the enterprise, capital, or knowledge to carry on the business of mining; consequently, in the course of a few generations the knowledge of working the mines, and even the situation of the mines themselves, were lost.

Since 1828, gold-dust has been found, in large quantities, at several places—at the "Old Placer," 27 miles from Santa Fe, and at the Real del Tuesto, some 12 miles further south. The quantities of the gold-dust obtained have varied from year to year, according to the number of persons employed in the search for it. During some of the past years it has exceeded, for one year, $250,000 at these two placers; and, from examination made, abundance of the precious metal, in the dust or grain, can be obtained at numerous points, every where south of Santa Fe, on the east side of the Sandilla mountains, as far as the Gran Quivira, a distance of about 100 miles, and towards the north for about 120 miles, to the river Sangre de Criste. I carried to the United States in 1842, $1500 in gold dust, from the last-named place. The "Arroya Honda," in the valley of Taos, El Quemado, and Las Trampas, have yielded considerable amounts of gold when wrought. That these gold regions have not produced the precious metals in immense quantities, is because the gold finders and diggers are all of the poorer classes, who only labour when necessity compels, and cease to work so soon as they obtain a supply for present wants and vices.

Neither capital, industry, or knowledge, have ever been brought to bear upon the enterprise, in consequence of the hitherto entire want of protection by the Mexican Government, either as to their individual rights, or against the attacks of the Indians.

Since 1828, several good mines have been wrought, with more or less profit, according to the enterprise and knowledge of the operator. Those only have yielded well which were wrought by foreigners, who were always restrained from investing capital to any amount, by the jealousy and oppression of the officers of the Mexican Government. The three or four gold mines which are now wrought by either foreigners or natives in the vicinity of the "Old Placer," and "Real del Tuesto," are managed upon the most limited scale, and with the most rude and imperfect apparatus imaginable, which, notwithstanding, yield handsomely, according to the means employed.

Several mines of silver, wrought in ancient times, are known in the territory. One at Avo, wrought by a single man, simply for his own support, is the only one wrought. One near Santa Fe, one at Cerrillas, and a bed of silver ore, of great traditional fame, in the Nambe mountains.

Nearly all the mountains of the territory abound in rich iron ore; I have seen many specimens as rich as that of the iron mountain of Missouri. Copper ore also abounds every where, but particularly at Sas Tijeres, Jemas, Abiquiu, Gudalopita de Mora; and between the Sieugia de Taos, and the river Pouie, there is an entire hill of fine copper ore. Lead is found at Cerrillas and Arroyo Honda of Taos. Coal is found in abundance, and of good quality, between the placers, in the Ratona mountains, and in many other places.

The above hasty sketch will give you a general idea of the mineral resources of this territory, when taken in connexion with your own actual knowledge on the subject. You are aware that the territory has never been explored by practical and scientific men. What I have stated above is derived from my own observations. Any further information I may be able to impart will always be entirely at your disposal.

CASCADE MINING COMPANY.

An adjourned meeting was held at the British Mining Offices, Moorgate-street, on Wednesday, the 18th August. E. L. Nugent, Esq., in the chair.

The minutes of the last special general meeting, held on the 31st July last, and the adjournment thereof to this day, having been read and confirmed, and the lease of the mine, executed by all the proper parties, having been produced, it was unanimously resolved, that the following gentlemen be a finance committee for conducting the affairs of the company, and that they be appointed for two months, or until another committee be elected—viz.: Messrs. E. L. Nugent, J. M. Matthew, G. W. Blanch, W. Fenton, Rev. F. Taunton, Messrs. D. L. Williams, and W. H. Oliver—and that three be a quorum. The thanks of the meeting were then unanimously given to the chairman, for his conduct in the chair.—[It appears, that this valuable piece of mining ground has been sought after by various parties for the last 50 years, but the owner of the soil refused to grant a lease until now—and we trust that the present adventurers will meet with that success in working it which has been so long foretold, and that it will prove a rich and lasting mine. The celebrated "Lydford Cascade" is within the limits of the mine.]

EAST WHEAL FORTUNE MINING COMPANY.

A meeting of adventurers was held at Martin's Hotel, Chacewater, on Thursday, the 12th inst.; the accounts of Mr. R. I. Hocking, the purser, were presented, showing balance against the mine of 70*l.* 17s. 10½d.—The accounts having been examined were allowed, and a call of 5s. per share made, to liquidate the debt, and for the further prosecution of the mine.—It was resolved, that three men and three boys be employed to continue the deep adit end, and two men and two boys to sink a shaft for ventilation in advance of such end (about 12 fms. deep); also, two men and two boys be employed to drive the shallow adit end, on the course of the lode.—The following report from Capt. R. Woolcock was read to the meeting:—"In accordance to the general usage, I here give a report of the above mine, and also what I deem to be the best mode for the company's adoption in its future prosecution. The deep adit is driven 66 fms., one lode has been intersected in driving, presenting very kindly appearances from what is to be seen, but being discovered very shallow, much cannot be said until seen deeper and in a more settled state; about 15 fms. remain to be driven to intersect the copper lode, and can be driven at present for about 3*l.* per fm.; about 40 fms. still further north it is expected that Hocking's lode will be intersected. At the shallow adit, 10 fms. from surface, on Hocking's lode, there have been driven nearly 60 fms.; in this level is exhibited a gossan of rich nature, perhaps not to be surpassed by any gossan to be found in the neighbouring mines, and highly indicative of leading to immense quantities of mineral in depth; in the bottom of this level are set two tribute pitches, one at 11s. in the 1*l.*, and the other at 13s. 4d. in the 1*l.*; from this level was sold, last week, about 18 sacks of tinwork, I expect at least equal to

the average of the county. The adventurers' ores remain yet unsold; this fact of itself, is sufficient evidence of the worth of this concern, there being scarcely a mine in the county that is its parallel. Two lodes to the north of Hocking's lode remain to be cut; and, from what has been discovered of them, they bid fair to be as good in their results as the one above referred to. In the prosecution of this concern, I would recommend the deep adit to be driven by an efficient pare of six men, and a shaft sunk on the present end to ventilate the mine; it might be sunk for 30s. to 40s. per fm., average price; the depth would be about 12 fms. I should also recommend the driving the shallow adit, on Hocking's lode—that being a very important feature in working this concern. The geological appearance of the country with which the lodes are surrounded, exhibits the highest indications of large metalliferous deposits, and justifiably warrants an efficient and extended exploration and development of this important concern. Should the company harmoniously co-operate in carrying out the practical and necessary workings, there can scarcely be a doubt but that their outlay and attention will shortly be remunerated by a dividend —the thing most to be desired in mining speculations."

CURRENCY CREEK SPECIAL SURVEY, SOUTH AUSTRALIA.

A meeting of shareholders was held at the London Tavern, on Wednesday, the 18th inst., for the purpose of receiving the report of the committee as to the shareholders who were willing to subscribe and amalgamate their interest for the common object of exploring the lands, in some of which indications of a valuable description of copper had been discovered.—The chair was taken by HANANEL DE CASTRO, Esq.—who said that since the last meeting no fresh information had arrived from Adelaide, and that about half the shareholders had given their assent to subscribe 10*l.* per share, and to amalgamate their interests, but the other half had refused, or were neutral. Under these circumstances he advised the adjournment of the meeting for further information, which will, no doubt, on its arrival induce the dissentients to come forward with more alacrity. —Mr. ROBERTS said, the misfortune was that the indications of the mineral were amongst the town lots, which were in such small sections that the assentients could not interfere for their own advantage without turning up something beneficial to the dissentients.—After some discussion, in which Mr. D. Mocatta, Mr. Lindo, Mr. Baker, Mr. Francis, Mr. Thompson, Mr. Crawford, and others, took part, a resolution was passed unanimously, "That there being no further information before the committee to warrant their proceeding in this research, the scheme should for the present be suspended."—A vote of thanks was passed to the chairman, when the meeting separated.

HARROWBARROW OLD MINING COMPANY.

At a two-monthly meeting of adventurers held on the 16th inst., the accounts were examined and passed; from which it appeared, that the cost for June and July was 1028*l.* 11s. 6d.; balance from last account, 245*l.* 11s. 5d.= 1274*l.* 2s. 11d.—By sale of tin, 27*l.* 15s. 4d.; calls, 1207*l.*=1234*l.* 15s. 4d.: showing balance against the mine of 39*l.* 7s. 7d. It was then resolved, that the meeting is desirous of recording its approval at the very satisfactory manner in which the affairs of the company have been conducted by Mr. Carne; and further, that he be discharged from all the outstanding liabilities in respect to the said mine, connected with his office as purser, and that any legal instrument be prepared for that purpose when he requires it. Mr. Carne having resigned his office of purser, it was resolved, that Mr. Frederick Marshall be the purser, at a salary of 4*l.* 4s. per month, with 10s. 6d. per month for petty stationery and postage; and that Mr. W. W. Palmer be clerk at the mine, at a salary of 4*l.* 4s. per month.

TREHANE MINING COMPANY.

At a meeting of adventurers, held at the mine, on the 17th inst., the accounts were examined and passed; from which it appeared that the labour cost for April and May was 365*l.* 1s. 1d.; bills, 85*l.* 15s. 3d.; lords' dues, 55*l.* 3s. 9d.; dividend, 1st June last, 256*l.*—together, 761*l.* 19s. 1d. By balance to end of March, 608*l.* 4s. 5d.; ores sold, 868*l.* 18s. 6d.—together, 1477*l.* 2s. 11d., showing balance in favour of the mine of 715*l.* 2s. 10d. It was then resolved, that a dividend of 20s. per share be declared, payable on the 24th inst. It was also resolved, that the claim of Mr. Thomas Kelly, as to the appointment of Captain N. Faull as agent to this mine, be objected to; and that the meeting do adjourn to the 31st inst., to elect an agent, and on other business. The following report from Captain Bryant was then read:—"In the 35 fm. level north, the lode is 3 ft. wide—worth 6*l.* per fm.; the stopes in the back of this level are producing a fair quantity of ore: we have a 6 ft. stope in the bottom of this level, which we took off from Trelawney 22 fm. level, where the lode is worth 15*l.* to 18*l.* per fm. The lode in the 30 fm. level north, is 4 ft. wide —worth 8*l.* per fm.; the stopes in the back of this level are looking well. Kelly's shaft is now sinking under the 30 fm. level, and which we hope to hole to the 35 within a month from this time. We sampled a parcel of ore on Thursday last—computed 41 tons, which will yield a good profit; and, having arranged with the Trelawney adventurers for a supply of water for dressing, and for attaching horizontal rods from their new engine for sinking our new shaft (Kelly's), I have not the least doubt, but one-third more ore can be returned. I think the terms of this agreement will be of great advantage to Trelawney, as well as to this mine. The working of both mines will now be considerably expedited. The length of lode in Trehane is now proved to be about 110 fms. in the 30 fm. level, where the lode is good throughout, and the underlie, so far as we have seen, is not half so much as most people anticipated; consequently, there is a great probability of this mine continuing several years, and paying a good profit. We have seen some branches in costeaning west of this lode, which I should say are promising to make ore in depth; and, having a much greater length in this part of the mine than on the main lode, if any thing could be discovered that would pay for working, it would enhance the value of this concern considerably; and to prove this, I would advise your driving a cross-cut in the 30 fm. level immediately."

WHEAL CURTIS MINING COMPANY.

A meeting of shareholders, and parties interested in the Wheal Curtis Mining Company, was held at the Guildhall Coffee-house, on Friday, the 20th inst., pursuant to advertisement—such meeting being called by Mr. J. Truscott.

J. HALLETT, Esq., in the chair.

The advertisement convening the meeting having been read,

Mr. J. TRUSCOTT proceeded to address the meeting; he observed, that it was undoubtedly a good mine, but that discrepancies and differences had arisen, from want of tact and management on the part of the directors of the company; while he had personally to complain of justice not having been done him. He would, however, at once proceed to direct the attention of the shareholders assembled to the advertisements which had, from time to time, appeared in the *Mining Journal*, and on which he would offer no remark, but leave the meeting to arrive at their own conclusions, after having heard them, and observed on the altered terms in which they were put forth. He would briefly mention the main points—for instance, in an advertisement of the 3d Oct., 1846, it was stated that, of the 6000 shares of which the company was constituted, 3000 shares were to be appropriated to the projectors, with a certain amount paid; and, in an advertisement of the 7th November, it is further stated that 5000, out of the 6000 shares, had been actually appropriated—3000 having been taken by the promoter, who had paid all calls thereon, and thus identified himself with the company, and the interest taken by him; and that 1000 only remained to be paid upon, the other 2000 shares having been taken by the public from the time of the first issue. On the 12th December again, an advertisement appeared, stating that no further applications for shares would be received, and that parties desirous of holding an interest must apply to their respective brokers—thus holding out the misrepresentation, as he should presently prove, that the shares had been allotted in full, to the extent of which the company was formed; it was, moreover, stated, in the advertisement referred to, that all deposits must be paid on or before Dec. 14. On the 9th of Jan. another advertisement appeared, stating, that 1000 shares (instead of 3000 shares) were taken by the promoter, and that the directors were holders of 2300 shares. The several journals of the 24th of April, 1847, convening a general meeting, and that of the 23d of that month, with a report of the meeting held on the 18th, were also referred to. Having referred to these several advertisements, Mr. TRUSCOTT observed, it must be apparent to every one present, that the directors had not only swerved from the original plan laid down, but had, by the several advertisements to which he had referred them, evidently misled the public, and made misrepresentations. He regretted this much, as he had a good opinion of the mine; but it was a duty he owed himself, and he thought it was only a duty he owed to the proprietors, to state things as they were. It had been said they were registered; he was at the office yesterday, when it appeared they were no such thing. As regards 5000 shares being taken up, or sold, such was not the fact, as appeared by the advertisements of the company, although such was boldly and publicly announced in November last. It was his wish, as at first contemplated, that the mine should be carried out on the Cost-book Principle. There was a point to which he would briefly advert—an interest he held in the mine, on which a difference, if not dispute, had arisen between him and the company: he could only say he wished the matter settled—it was his desire to avoid legal proceedings, and put matters right.

Mr. MOSS begged to observe, that he attended there not as solicitor to Mr. Truscott, but because he understood Mr. Truscott complained of two matters:—the one that the company was not regularly registered; and, secondly, that the 1-14th portion of shares, to which he was entitled, had not been rendered him.

Mr. STAPLEY (a director) stated that he had tendered 498 shares to Mr. Moss, with 20s. per share paid thereon, on the understanding that 10s. extra per share would be paid, and which Mr. Moss had undertaken should be done.—This, however, was denied by Mr. Moss, who stated that he would consult Mr. Truscott on the subject: in the end, however, it appears nothing was effected.

Mr. TRUSCOTT (who was evidently much excited), in the course of the proceedings, stated that the directors were altogether wrong. He held in his hand the Joint-Stock Companies' Act, whereby they were limited to a call of 10s. per 100*l.*, until they should be finally registered: this would have been something like 4*l.* per share, whereas they had called for 20s. in the first instance. He considered the Act had been violated, and that they could not proceed.

Mr. PILKINGTON, jun., begged to offer some few remarks, with respect to the course Mr. Truscott had pursued; that gentleman was a party to all the antecedent acts of the company, and had concurred in them. He (Mr. P.) had advocated the establishment of the company under the Joint-Stock Companies' Act, expressing himself as having no confidence in Cornishmen, although he was one.—In this remark, it is only due to Mr. Truscott, was at the moment repudiated by him—hence, we can say nought where the truth rests; but, as they do say in Cornwall, "Where it is, there it is."]

Mr. BELL (the solicitor of the company) proceeded to address the meeting at considerable length, and in an excited manner—inasmuch that, when we state, he spoke of the "audacity" of Mr. Truscott in convening the meeting, and making the observations he did, we think that the less said the better. He would observe, that it was impossible it could have been contemplated by Mr. T. that the company should have been under the Cost-book System, as he was to have been entitled to his shares, with 1*l.* paid thereon.—[We doubt not, there must have been an error on the part of Mr. Bull in advancing this point, which quite established that of Mr. Truscott's, who declared that he declined taking his shares, because the mine was not conducted on the Cost-book Principle; and this is pretty clear, inasmuch that the Joint-Stock Companies' Act only provides for one-half per cent. being paid until complete registration—while his shares, with 1*l.* paid on 4*l.* shares, would have been at the rate of 25 per cent., or 50 times the amount warranted by the Act.]—Mr. BULL, in continuation, stated, that a Deed of Settlement had been prepared and executed by more than one-half of the shares subscribed for—while by the Act only one-quarter was required. Some remarks had been made as to the discrepancies in the advertisements, which he was most ready to meet. It was, he admitted, originally proposed and agreed upon, that Capt. Pilkington should take 3000 shares —that gentleman taking upon himself the expenses of the mine up to a certain period. This arrangement was, however, subsequently altered—it having been agreed upon with the directors that he should receive in lieu thereof 1000 shares, with 30s. paid thereon, instead of 3000 shares, with 1*l.* paid; and such had been carried out—the company paying the expenses incurred. The advertisements referred to had been distorted for a purpose. He had further to observe, that, although Mr. Truscott had stated that the company was not duly registered, his simple answer to such an assertion was, that the company had been duly registered yesterday—and hence they were, despite of Mr. Truscott's remarks, in a different position to that which he would assume. He was ready to admit, that, seeing the advertisement of Mr. Truscott, he had been stimulated to exertion, and was happy to say that all was now perfect. Mr. Bull proceeded with some remarks, which we can hardly consider relevant, and which caused some confusion, to which we must say Mr. Truscott, in some degree, contributed; such, however, was in a measure excusable, Mr. Bull having charged Mr. Truscott with drawing the agreement. This, however, was at once denied, in *strong* terms, by that gentleman, and, subsequently, admitted by Capt. Pilkington to have been done at his desire, and executed by him, before being submitted to Mr. Truscott.

A discursive *talk* subsequently took place, which was, in fact, no discussion.—Mr. TAYLOR, in the course of which, moving, after some preliminary observations, that the meeting had heard the statement submitted by Mr. Truscott, but that they did not consider such representation affects the interests of the shareholders, or the state of the company.—The resolution having been seconded by Mr. PILKINGTON, jun., was carried, with one or two hands being held up against it.

A vote of thanks having been moved to the chairman, was seconded by Mr. TRUSCOTT, who stated, that having originally held 50 shares, he had attended the general meeting of the company, at which he had been nominated and appointed as a director. He had since then visited the mine, and was well pleased with the prospects of the company, and the satisfactory state of their works. He was sorry to find that there had been a disinclination to pay up the calls on the shares; but, to enable the company to go on, and have their engine at work, which was now the case, he had not hesitated to make an advance. He thanked the meeting for their courtesy and kindness.

DARTMOOR CONSOLS MINING COMPANY.

We now give the report of H. Williams, Esq., the engineer to the Dartmoor Consols Mining Company, as promised in our notice of last week:—

"Being honoured with the appointment of consulting engineer to your company, I have, by the desire of the secretary, minutely investigated the Dartmoor Tin Mine, and beg most respectfully to place before you my best and most careful consideration. The sett held by the company is extensive, and largely intersected by tin lodes, which is most satisfactorily proved by the operations of the late proprietors. The mineral veins, more particularly tin, traversing through the decomposed granite of this district, are many; the lodes which have been worked, but to no great extent, present most favourable features to a practical miner; and I was informed, by mining captains of respectability, and old miners who have worked for many years in the neighbourhood, that the lodes really are what they represent them to be. After a fair analysation of all the information I could collect, I proceeded to examine the shallow adit, which is driven nearly 600 fms. eastward through a decomposed granite, and is in a very good condition; on my way through the adit, I observed several cross-courses and droppers, the latter tending principally towards the main lode, which is thrown downwards; the main lode itself presents a very healthy feature, and the walls are tolerably firm. From the main lode large quantities have been excavated, and a much greater quantity still remains to be worked—but, to do so profitably and permanently, you must have a main water shaft; the site of Henry's shaft I consider to be very well selected for that purpose, from which you can run your cross-cuts, or drifts, to intersect the north and south lodes; by that means you will drain all the lodes by one set of pumps, put in motion by water-power—in this opinion Capts. Spargo and Gregory fully concur. By adopting the above arrangement, you will intersect the lode at deeper levels than hitherto, and at a point where it is calculated that the droppers will fall in with the main lode, and which I fully anticipate will be more productive of a richer ore than has hitherto been obtained, and the walls firmer than in the shallow levels; and it will then afford greater facilities to raise almost any quantity of tin ore which can be taken at once from the shaft to the stampers, there washed, and cleaned ready for smelting. Great inconvenience at present exists for want of easy communication with Plymouth, and other places, to where the produce will be taken—consequently, the operations of the company must, from necessity, be somewhat retarded. I take this opportunity to observe, since my arrival in town, I have had the pleasure of meeting with Mr. Phillips, of the Morley Clay-Works, which adjoins the Dartmoor sett, who, in conjunction with other influential gentlemen, are interesting themselves for the formation of a railway, proposed to pass within half-a-mile from our mines, and will communicate direct with Plymouth. Should this scheme be carried out, remunerative advantages will be obtained, and inducements will be held forth to extend operations upon a very large scale, and the existing inconveniences be entirely removed.

The works are progressing rapidly; the sinkers are now going on with Henry's shaft to its intended depth, where we calculate it will intersect at a point where the droppers will fall into the main lode. The wood and iron work for the main engine-wheel are in an advanced state, and will very soon be complete. The main engine-wheel will be an overshot, 50 ft. diameter, and 3 ft. 6 in. breast, supplied from two never-failing streams of water; and the water from the shallow adit will likewise add to the supply. The tail water we intend to work the stampers with. The stamp heads, pumps, pumping-gear, rods, truck or guide wheels, &c., &c., used by the late proprietors, are still upon the property, and a very small outlay will make them complete to answer the present arrangements. The specimens of tin ore taken from the lode by myself, are, in my opinion, of excellent quality; and I believe, by judicious management, can be worked highly remuneratively. The analysis of this ore will be handed to you next week. When the mine is thoroughly opened upon the different lodes and cross-courses (in the centre of them Henry's shaft is placed), very large quantities of tin ores will be raised; and I have every reason to believe, from what I have been able to observe, that it will return very satisfactory dividends to the shareholders. To Capts. Spargo and Gregory, I beg to return my sincere thanks for their kind attention in showing me over the mine, and for their frankness in disguising nothing, or withholding anything, that would appear disadvantageous; and I congratulate the company on having obtained the services of two such competent miners."

GRAMBLER AND ST. AUBYN.—At a meeting of adventurers, held on Monday last, the following accounts were examined and allowed:—To balance due to purser on the 1st of March, 143*l.* 9s. 9d.; costs and merchants' bills for March, April, May, and June, 2266*l.* 15s. 3d.=2410*l.* 5s.—By ores sold, less dues, 1858*l.* 18s. 7d.: balance now due to purser, 551*l.* 6s. 5d.

The Wheal Portledge Copper Mine, about four miles to the west of Bideford, is again taken up by a new company. It has just commenced working, and is likely to prove very successful.—*West of England Conservative.*

CORNWALL RAILWAY.—Mr. Findlater, one of the contractors, has brought a great part of his plant down, for the purpose of beginning the works on the line of the Cornwall Railway. The premises at the head of the Truro river, lately in possession of the Patent Wood-Works Company, are now occupied by Mr. Findlater, and a portion of the plant has been removed to Buck's Head, about a mile northward of Truro, where a tunnel is to be made.—*Cornwall Gaz.*

NEW BROAD-GAUGE LINES TO SOUTHAMPTON.—It is stated, in a quarter where correct information is generally possessed, that in the next session a line will be submitted to Parliament, for effecting a broad gauge communication between the important manufacturing districts with which the Great Western Railway is now connected—viz.: Worcester, Wolverhampton, Dudley, Gloucester, and the mineral districts of Wales, and the port of Southampton. We have not been able to ascertain the precise mode in which this desirable communication is likely to be carried out; but we are induced, from inquiries, to believe the statement we have just given is perfectly true.—*Rail. Record.*

NEW TRADE.—Among the importations from Antwerp last week, was a cargo of roofing tiles. This is understood to have been the first imported from abroad, and it appears to be the commencement of a new trade, as it is said there is another vessel on its way, and that a large quantity is still ready for shipment.

MINES, METALLURGIC ESTABLISHMENTS, &c., OF BELGIUM.

We are enabled to present to our readers an abstract of the official returns, for the years from 1839 to 1844, relative to the mines, metallurgic establishments, steam-engines, &c., of Belgium. The returns have been drawn up by the officers of the Department of Mines in the Ministry of Public Works in Belgium, and are the latest that have been made. They present the fullest and most accurate account of the mining and metallurgic affairs of that country, which it is possible to obtain.

I. COAL MINES.—PROVINCE OF HAINAUT.

The number of coal mines conceded did not vary in a very sensible manner during the period from 1839 to 1844; the differences in the numbers arose particularly from the regularisation of old concessions, or workings. The number of mines conceded, or allowed to be worked provisionally, during each of the years from 1839 to 1844, was as follows:—

	1839.	1840.	1841.	1842.	1843.	1844.
Mines conceded	59	60	63	68	74	78
Mines allowed to be worked provisionally	95	50	58	83	82	79

The superficial extent of the soil, attributed to the persons to whom mines were conceded, or permissions for provisional workings granted, was:—

	1839.	1840.	1841.	1842.	1843.	1844.
	hect.	*hect.*	*hect.*	*hect.*	*hect.*	*hect.*
Surface conceded	36,391	39,351	39,961	41,695	43,297	54,645
Surface attributed provisionally	47,266	44,406	43,401	12,265	40,417	32,905

The above figures must not, however, be accepted as rigorously correct, for there exist, in certain localities of the province of Hainaut a considerable number of workings for coal, situated one under the other in the same extent of surface. These are the concessions of *beds* or *veins*, anciently instituted by the *hauts justiciers*. The following figures show the number of mines worked, or left unworked:—

	1839.	1840.	1841.	1842.	1843.	1844.
Mines worked	123	115	115	110	109	107
Mines left unworked	31	35	36	41	47	50
Total	154	150	151	151	156	157

The Government, by the advice of the Council of Mines, rejected many demands for concessions, because the persons who made them had not previously undertaken researches for coal, or because the works executed did not prove that deposits of coal existed which could be worked profitably. The number of pits, &c., worked, and of pits at which preparations for working were being made, was—

	1839.	1840.	1841.	1842.	1843.	1844.
In activity	293	309	286	279	258	247
In construction	101	84	89	102	111	121

The greatest and average depths of the pits which were worked were—

Greatest depth.						Average depth.					
1839.	1840.	1841.	1842.	1843.	1844.	1839.	1840.	1841.	1842.	1843.	1844.
Metres 460 ..	460 ..	460 ..	460 ..	460 ..	460	145 ..	164 ..	177 ..	183 ..	188 ..	195

The workings of the greatest depth were in the *arrondissement* of Charleroy; but the average depth of the pits was greater in the *arrondissement* of Mons. The extraction of coal, and the draining of mines, was principally effected by the assistance of steam-engines. The number of steam-engines, used for the extraction of coal, were—

1839	224	machines, representing	6382 horse power.
1840	244	" "	7306 "
1841	235	" "	7710 "
1842	263	" "	7570 "
1843	260	" "	7616 "
1844	269	" "	7919 "

The number of the machines for taking off the water from the mines was—

1839	66	machines, representing	6371 horse power.
1840	70	" "	6536 "
1841	67	" "	6316 "
1842	77	" "	8066 "
1843	78	" "	8074 "
1844	81	" "	8598 "

It will be observed, that the steam-power was greater for removing the water than for extracting the coal. Other artificial or natural means were also employed in the extraction of coal—viz:

	1839.	1840.	1841.	1842.	1843.	1844.
By horses	87	96	80	70	54	56
Mechanical apparatus	78	71	53	55	54	45
Gallories	9	7	10	8	7	7

During each of the years from 1839 to 1844, 75 galleries for letting off water, and for drying the mines, were also brought into use in the province of Hainaut. Since 1839 there had been a continual progress in the application of steam to the ventilation of coal mines in the same province. The number and power of the steam-engines employed for this purpose were—

1839	7	machines, representing	102 horse power.
1840	9	" "	123 "
1841	14	" "	139 "
1842	21	" "	179 "
1843	25	" "	206 "
1844	28	" "	238 "

The pits, which were not supplied with pneumatic machines, were ventilated *naturally*—that is, by the natural heat of the underground works, or by *foyers* placed at the foot of chimneys in masonry, or at different depths in the pits, and fed, either by the air leaving the mine, or by the air introduced directly from the surface. The ventilation of what are called *mines à grison* (carburetted hydrogen gas), is one of the most important things in the working of mines; inasmuch as, if well directed, it may considerably diminish, if not prevent, the numerous disasters which arise from the accumulation of inflamable gas in the works. The application of a good system of ventilation to mines of this category was an object of the incessant solicitude of the Government engineers, and they endeavoured to remove the vices of ventilation, which they considered dangerous to the workmen—such as the non-division of the airings, the descending march of a current of air charged with gas, the insufficiency of the dimensions of the canals of circulation, the use of conduits of air, called *royons, carnets*, or *kernès*. In spite of the incontestable improvements effected in the miner's lamp by M. Mueseler—in spite of the almost general example of the proprietors of the *mines à grison*, in the province of Liege —and, in spite of the reiterated recommendations of the officers of the mines, most of the proprietors of mines in the province of Hainaut continued to give the preference to Davy's lamp. Of late, however, they showed a disposition to employ more generally those of M. Mueseler. In 1844, the number of lamps of that engineer, employed in the coal-pits of the Hainaut, had risen from 146 to 350, and in 1845 to 600. At present it is about 1200. The number of men employed in the coal-pits of the district of Mons underwent certain fluctuations; but in those of the district of Charleroy it was pretty nearly stationary. These numbers were—1839 24,793; 1840, 27,566; 1841, 26,198; 1842, 27,955; 1843, 27,104; 1844, 27,719. The average *daily* pay of the principal categories of miners, &c., in the three coal districts of the province of Hainaut, was as follows:—

Years.	Miners.	Drawers.	Loaders & Unloaders.	Various.	Of all kinds.
	fr. c.	*fr. c.*	*fr. c.*	*fr. c.*	*fr. c.*
BASIN OF THE COUCHANT DU MONS.					
1839	2 87	2 00	1 82	2 09	2 26
1840	2 74	2 95	1 74	2 10	2 19
1841	2 49	2 98	1 67	1 85	2 07
1842	2 39	2 77	1 83	1 86	2 03
1843	2 31	2 55	1 80	1 83	1 83
1844	2 25	2 40	1 47	1 63	1 80
BASIN OF THE CENTRE.					
1839	1 40	1 00	1 30	1 70	1 30
1840	1 25	0 90	1 20	1 60	1 20
1841	1 35	0 90	1 20	1 60	1 20
1842	1 35	0 90	1 20	1 60	1 20
1843	1 35	0 90	1 20	1 60	1 20
1844	1 40	1 00	1 30	1 70	1 30
BASIN OF CHARLEROY.					
1839	2 40	1 40	1 60	1 80	1 60
1840	2 00	1 20	1 55	1 60	1 60
1841	2 05	1 20	1 65	1 60	1 50
1842	1 90	1 15	1 50	1 60	1 55
1843	1 90	1 10	1 40	1 60	1 50
1844	1 90	1 10	1 45	1 50	1 60

[*To be continued in next week's Mining Journal.*]

EXPORTS OF THE UNITED KINGDOM.—We extract the following from the exports of the principal articles of British and Irish produce and manufactures in the three half-years ending 5th July, 1845-46-47:—

	1845.	1846.	1847.
Coals and culm	439,237	478,243	432,497
Glass	246,517	133,117	183,746
Hardware and cutlery	1,068,618	1,069,045	1,096,956
Machinery	344,033	356,016	341,403
Metals—Iron and steel	1,772,508	2,199,000	2,463,954
Copper and brass	901,408	747,681	849,751
Lead	131,580	76,945	100,620
Tin, unwrought	19,497	40,558	75,882
Tin-plates	317,426	358,089	235,771
Salt	96,030	97,007	141,195

urrent Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

k Stock, 7 per Cent., 195½	Belgian Bonds, 4½ per Cent., —
r Cent. Reduced Ann., 87⅝ ¾	Dutch, 2½ per Cent., 56 5⅞ 6
r Cent. Consols Ann., 87⅝ ¾	Brazilian, 5 per Cents., New, 84½
r Cent. Annuities, —	Chilian, 6 per Cents., 90
er Cent. Ann., 89 ¼ ⅜	Mexican, 5 per Cents., 18¼ ⅜
g Annuities, 9½	Spanish, 5 per Cents., 20⅝
a Stock, 10½ per Cent., —	Ditto 3 per Cents., 30
r Cent. Consols for Acct., 87⅝ ¾	Portuguese, 4 per Cents., 27½
hequer Bills, 1000l. 3d., 2 dis. 1 pm.	Russian, 5 per Cents., 110

MINES.—The mining share market has evidently improved since our t; during the week several transactions have been completed, which re in course of negociation, as referred to in our last.

The meeting of Trehane adventurers, held on Wednesday, declared a vidend of 1l. per 256th share.

Shares in the following mines have changed hands—viz.: Marke Val- , Trelawney, West Providence, Condurrows, West Seton, Herodsfoot, dscombe, Trehane, West Basset, Callington, East Crowndale, Gwinear. Condurrows have been in demand; several shares have changed hands, d an advance in each transaction appears to have taken place.

In the Callington Mines several shares have been done during the week advanced prices; and, in consequence of further discoveries, communicated by private letters, shares have been in greater demand.

A reaction has also taken place in Holmbush shares, arising principally om several improvements since the official letters have been received— e greatest improvement appears to be in the 100 fathom level, going uth towards the Callington lode, and shares have advanced to our esent quotation.

East Crowndale is reported to have improved; we have seen some excellent stones of ore, taken from the engine-shaft during the week.

The business done in foreign shares during the week has been very few —the only transactions, which have come under our notice, have been in Australian and St. John del Rey shares.

RAILWAYS.—On Monday, railway shares generally supported the prices with which the market closed in the previous week; and, in some cases, o doubt, where a previous decline had induced buyers to come forward or investment, better prices were obtained. No fluctuations of any moment have taken place during the week, and the market closed with a moderate degree of firmness, owing to an improvement in the price of Consols.

MEETINGS.—LONDON AND BLACKWALL: half-yearly; the receipts had been 27,602l.; nd expenses, 23,841l.: leaving a balance of 3761l., which would give a dividend of 1s. 6d. er share. The returns for the first six months of 1847, as compared with 1846, had decreased from 1,496,180 passengers and 23,732l., to 1,354,622 passengers and 22,969l.—CORK AND WATERFORD: half-yearly; it was proposed that a call of 1l. per share be made, o commence the works from Waterford to Tramore; but, on the motion of Mr. Garrett, t was resolved, that the directors be requested to postpone any call until March, 1848.—GREAT WESTERN: half-yearly meeting; from the report, it appeared, that the passenger traffic receipts had diminished 4100l.; while there had been an increase in goods of 51,007 tons, and 14,133l.; 30,000l. was placed to the reserve fund from premiums on the sale of shares; the balance disposable was 255,343l., from which a dividend of 4 per cent. for the half-year was declared; on the capital account, it appeared the entire receipts were 10,735,950l. 9s.; and expenses, 10,630,763l. 6s. 11d.: leaving 105,187l. 2s. 1d. —MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE: half-yearly; the traffic returns had gradually and steadily improved, and a dividend of 5l. per cent. per annum was declared. —EAST AND WEST YORKSHIRE JUNCTION: half-yearly; the receipts from the commencement had been 94,357l., and expenses 93,615l.—SOUTHAMPTON AND DORCHESTER: half-yearly; this line has now been open for some months, and, according to the report, the traffic supported the most sanguine expectations.—TAFF VALE: half-yearly; there was an increase in the revenue of 2775l., and a dividend of 3l. 10s. on the 126l. shares.

STATISTICS OF RAILWAY EMPLOYMENT.—A return of the number and description of persons employed on the railways of the United Kingdom (open for traffic), on the 1st of May last, has just been printed, from which it appears there were employed on 74 railways, comprising an extent of 3305 miles, 47,218 persons; of these 124 were secretaries, managers, and treasurers; 96 engineers; 399 superintendents; 91 storekeepers; 100 accountants and cashiers; 100 draughtsmen; 3432 clerks; 823 foremen; 2969 enginemen or drivers, and assistants; 1163 conductors or guards; 10,800 artificers; 1041 switchmen; 8576 policemen, porters, and messengers; 4148 platelayers; 12,493 labourers; 407 gatekeepers; 151 waggoners; 49 breaksmen; and 256 had miscellaneous employment. From a similar return on lines and branches in course of construction at the same period, amounting to 128, and comprising an extent of 6455 miles, it appears there were 256,509 persons employed. Of these 235 were secretaries and managers, 34 treasurers, 549 engineers, 2382 superintendents and storekeepers, 264 accountants and cashiers, 1437 draughtsmen and clerks, 240,301 artificers and labourers, 153 inspectors, 32 land surveyors, 6741 miners or quarrymen, 1087 foremen, 122 policemen or gatekeepers, 16 porters, servants, or watchmen; 876 platelayers, 1793 horsedrivers or carters, and 487 had miscellaneous employment. Total number of persons employed on these two classes of lines, 303,727.

THE "LONDON" ENGINE.—This engine (on Mr. Crampton's principle), yesterday took the morning mail, with 12 carriages, a distance of 31 miles—viz.: from Euston station to Tring, in 39 minutes.—*Railway Record.*

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Price per share	Last Div.	*Traffic Returns.* 1847	1846
Arbroath and Forfar	15	£179,939	26½	3 p.c.	£335	£348
Chester and Birkenhead	15	658,293	39⅝	2½	808	1088
Dublin and Drogheda	35	689,248	54	3½	1002	1021
Dublin and Kingstown	7½	473,282	—	9	1253	1152
Dundee and Arbroath	16½	156,323	39	6	—	433
Dundee, Perth, and Aberdeen	47	285,745	33½	6	1088	417
East Lancashire	30½	2,207,490	18	—	1137	—
Eastern Counties	226	6,513,026	18⅝	7	13077	8985
Eastern Union	44	531,021	59	-	1218	398
Edinburgh and Glasgow	48	2,275,435	63	6	4705	4117
Glasgow, Paisley, and Ayr	60½	1,567,281	121	7	2820	2815
Glasgow, Paisley, & Greenock	22	835,918	18¼	2	—	1270
Gt. Southern & Western, Ireland	110½	1,343,718	29	—	1732	—
Great Western	241	9,714,939	109	8	21543	21771
Kendal and Windermere	10½	147,001	24½	—	240	—
Lancaster and Carlisle	70	1,209,913	60	—	1699	—
London and North Western	382	18,042,004	163	10	49115	46285
London and Blackwall	4	1,102,717	5⅞	1¼	1406	1440
London, Brighton, & South Coast	137½	5,109,667	48⅛	7	10660	10530
London and South-Western	186½	5,836,132	69⅝	9	10889	8944
Londonderry and Enniskillen	14½	—	24½	—	289	—
Manchester & Leeds	147½	5,036,391	94	5½	9987	7925
Manchester, Sheffield, & Lincolnsh.	49½	1,678,108	69	5	2525	1931
Maryport and Carlisle	28	414,895	—	—	686	518
Midland Company	371	7,862,274	115	7	23193	20105
Newcastle and Carlisle	65	1,184,080	118	5	2703	2134
Norfolk	70½	1,199,689	108	7	2334	1481
North British	78	1,459,958	30⅝	—	2950	2334
Shrewsbury and Chester	17	591,158	21½	—	519	—
South Devon	29	1,061,283	29	5	1087	600
South-Eastern	157½	5,888,411	34½	3⅝	10979	10180
Taff Vale	38	888,411	—	6½	1583	1078
Ulster	25	358,353	52	5½	861	749
Whitehaven Junction	12	91,274	—	—	—	—
York, Newcastle, & Berwick	228½	3,683,102	34½	9	13408	—
York and North Midland	182½	2,483,256	77½	10	9322	7414

Total earnings for last week, £215,266, being an increase of £37,018 over last year.

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Aug. 14, was 16,521; amount of money, £68 16s. 9d.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Charlotte 16 9—Chester Main 16 3—Davison's West Hartley 17 9—Delaval Hartley 17 3—Hasting's Hartley 17 9—Holywell Main 16 9—Original Tanfield 15 6—Ord's Redheugh 16—Ravensworth Pelaw 16—Stewart's Hartley 16 6—Tanfield Moor 17 9—Townley 16—Tanfield Moor Bute's 16—West Wylam 16—West Hartley 17 9—Wylam 16—Wall's End Bewicke and Co. 17 9—Gosforth 17 9—Heaton 17 9—Hotspur 17 6—Killingworth 17 9—Walker 17 9—Wharncliffe 17 9—Eden Main 18—Braddyll's Hetton 18 9—East Hetton 17 9—Haswell 19 3—Hetton 18 9—Lambton 18 9—Merton 19—North Hetton Lyons 18—Russell's Hetton 18 6—Richmond 18—Stewart's 18 9—Caradoc 18 9—Hartlepool 19—High Thornley 17—Kelloe 18 9—Thornley 17 9—Adelaide Tees 18 6—Brown's Deanery 17 6—Seymour Tees 18—South Durham 17 9—Tees 18 9—West Tees 17 3—Derwentwater Hartley 17 3—Howard's West Hartley Netherton 17 9—Sidney's Hartley 17 9.—Ships at market, 159; sold, 129; unsold, 30.

WEDNESDAY.—Chester Main 16 6—Dean's Primrose 16 6—Delaval Hartley 17 6—Hasting's Hartley 18 6—Original Tanfield 15 6—Stewart's Hartley 16 6—Tanfield Moor 17 9—Townley 16—Tanfield Moor Bute's 16—Wall's End Bewicke and Co. 17 9—Gosforth 17 9—Eden Main 18—Belmont 18 3—Braddyll's Hetton 18 9—Hetton 18 9—Lambton 18 9—Murton 19—Russell's Hetton 18 6—Richmond 18—Stewart's 18 9—Hudson's Hartlepool 18—Kelloe 18 6 to 18 9—Thornley 17 9—Adelaide Tees 18 6—Brown's Deanery 17 9—Richardson's Tees 17 3—Seymour Tees 18—South Durham 17 9—Tees 18 9—West Hetton 17 9—Derwentwater Hartley 18—Ships arrived, 52.

FRIDAY.—Adair's Main 16 3—Charlotte 17—Davison's West Hartley 18 6—Dean's Primrose 16 6—Delaval Hartley 17 9—Holywell Main 17 6—North Percy Hartley 18 6—Original Tanfield 15 6—Ord's Redheugh 16 6—West Hartley 18 6—Wylam 17 3—Wall's End Bewicke and Co. 18 3—Brown's Gas 15 6—Bell and Brown 18 3—Brancepeth 16—Killingworth 18 3—Northumberland 18—Riddell's 18—Wharncliffe 18 3—Eden Main 18 6—Belmont 18 6—Braddyll's Hetton 19—East Hetton 18—Haswell 19 6—Hetton 19 3—Lambton 19—Russell's Hetton 18—Richmond 18 6—Shotton 18 9—Stewart's 19 3—Caradoc 19—Kelloe 18 9 to 19—South Kelloe 18 3—Thornley 18—Adelaide Tees 18 9—Barrett 18 3—Cowndon Tees 18—North Tees 17—Richardson's Tees 17 9—Seymour Tees 18 3—South Durham 18 3—Tees 19 3—West Tees 17 9—Cowpen Hartley 18 6—Derwentwater Hartley 18—Dipton Coke 25—Howard's West Hartley Netherton 18 6—Acorn Close 17 9.—Ships at market, 117; sold, 99; unsold, 18.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7	12
512	Albert Consols	1	2¾
1024	Alfred Consols	4½	80
256	Alternum Consols	2	12
235	Andrew and Nanglies	28½	16
10000	Ayrshire Iron Company	5	3⅞
1624	Balleswidden	9	18
128	Balnoon Consols	25	25
10000	Banwen Iron Co.	2	—
1000	Barristown	4½	10
4000	Bedford	2½	3½
128	Besore Lead Mine	14	10
315	Birch Tor Tin Mine	24½	7½
8000	Blaenavon	50	23
100	Botallack	175	140
120	Brewer	5	7
10000	British Iron, New, regis.	10	18½
—	Ditto ditto, scrip	10	19
128	Budnick Consols	52½	40
128	Burthy	20	21
100	Bwlch Cwmerfin	20	—
128	Callestock	17	30
1000	Callington	19	34
256	Caradon Copper Mine	9½	1
256	Caradon Mines	22½	17
256	Caradon United	24	10
256	Caradon Wh. Hooper	20	4
1000	Carn Brea	15	115
2048	Carmarthen Consols	2	3
2048	Cascade	1	1
112	Charlestown	200	100
166	Cleveland	9	5
512	Coatlithe Hill	½	1-1½
1900	Combmartin	7½	3
500	Comblawn	1½	1½
128	Comfort	45	100
256	Condurrow	20	30
2560	Cook's Kitchen	14	5½
1000	Coombe Valley Quarry	1½	1½
1000	Copper Bottom	1	5
1024	Cosheen	4½	20
240	Craddock Moor	15½	15
128	Creeg Braws	120	100
500	Cubert Mine	12½	23
2048	Dartmoor Consols	2	4
7100	Derwent	8½	5
1024	Devon & Courtenay Con.	6	2
1024	Devon Great Consols	1	250
1000	Dhurode	2	5
186	Dolcoath	30	50
2560	Drake Walls	4	4
10000	Durham County Coal	45	9
256	East Alvenney	6	10
112	East Caradon	42	42
2048	East Crowndale	4½	1⅝
512	East Combe Silver-Lead	6½	6½
128	East Pool	5	60
100	East Relistian	22	40
9000	East Tamar Consols	1⅝	2
—	East Wheal Albert	1	3
94	East Wheal Crofty	280	125
256	East Wheal Fortune	2	3
128	East Wheal Rose	50	1300
2048	East Wh. Rough Tor	½	2
—	East of Scotland Iron Co.	2½	1⅝
123	East Wheal Seton	14	20
256	Elborough	1½	2½
256	Exmoor Wh. Eliza	3½	11
512	Fowey Consols	40	45
6400	Gadair	2	2
20000	Galvanised Iron Co.	10	9½
10000	Gen. Mining Co. for Irel.	2	1½
2048	Georgia Tin Mines	1½	1½
256	Gonamena	31½	70
128	Goonvrea	4	1½
274	Grambler & St. Aubyn	—	12
100	Great Consols	1000	400
256	Great Callestick Moors	22	25
2560	Great Michell Consols	1½	3
256	Great Resugga Moor	3	3½
512	Gt. Wh. Rough Tor Con.	6½	30
1500	Great South Tolgus	2	2
100	Grogwinion	5	—
1000	Gunnis Lake	1½	3
256	Gwinear Consols	5	18
1000	Hanson	14	2
1000	Harrowbarrow Old Mine	8½	2
800	Hawkmoor	3	2
6000	Heignston Down Con.	½	2½
256	Herodscombe	2½	10
256	Herodsfoot	14	19
10000	Hibernian	12½	1½
239	Hobb's Hill	6	3
1000	Holmbush	19	8-8½
827	Kirkcudbrightshire	5⅝	8
2048	Lamberooe Wh. Maria	10	3
2048	Lanivet Consols	4	2½
200	Larkholes	1	3
128	Lelant Consols	90	60
160	Levant	—	90
1000	Lewis	15	6½
1280	Llancynfelin	6	—
1000	Llwyn Malees	5	—
3600	Llynvi Iron	50	60-65
256	Lostwithiel Consols	7	7
128	Ludcott	3	3
6000	Marke Valley	10	3½
5000	Mendip Hills	2½	1½
5000	Merionethshire Slate & Slate Slab Co.	1½	2⅝-2½
20000	Mining Co. of Ireland	7	6½
256	New East Crowndale	3½	3½
128	North Fowey Consols	30	30
100	North Pool	45	370
70	North Roskear	10½	400
512	North Treburget	2	3
100	North United	72	15
256	North Wh. Abraham	½	12
262	North Wh. Leisure	1½	3½
128	North Wh. Providence	2½	8
15000	Northern Coal Co.	23	2
1200	Old Delabole Slate Co.	25	50
128	Par Consols	900	1000
256	Penhallow Moor	15	4
4000	Pennant	1½	2½
100	Penrhiw	30	65
128	Pen-y-Cefn Mine	50	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	9½	15
512	Plymouth Wh. Yeoland	4½	16
256	Polsaith Consols	2	4
2048	Prince Edward	1½	1½
112	Providence Mines	35	45
256	Redruth Consols	3	2
10000	Rhymney Iron	50	30
10000	Ditto New	7	6½
256	Rose Consols	10	2
1000	Rosewall Hill	1	5
256	Rosewarva Mines	—	12
—	Shotts Iron Company	50	65
2500	Silver Valley	5	2

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
128	South Caradon	10	450
2000	South Dolcoath	2	1
256	Sth. Friendsh. Wh. Ann	16	14
200	South Harvannah	10	25
9000	South Tamar	½	¾
256	South Tolgus	2½	25
800	South Towan	10	1½
256	South Trelawney	15½	6½
128	South Yeoland	16½	20
128	South Wheal Basset	110	65-70
124	South Wh. Francis	160	210
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	2½
256	South Wheal Rose	11½	1
10000	Southern & Western, Irish	2	4-5
280	Spearne Moor	30	40
256	St. Austell Consols	9	14
94	St. Ives Consols	—	320
128	St. Michael Penkivel	5	10½
1000	Stray Park	43	30
9600	Tamar Consols	5	5½
1024	Tavy Consols	3½	5
6000	Tincroft	7	8
1000	Tin Vale Consols	2	2½
256	Ting Tang	15	10
128	Tokenbury	143½	10
256	Trehane	2	22½
5000	Treleigh Consols	6	4
2000	Trenance	2	—
256	Trenow Consols	30	15
96	Tresavean	10	250
120	Trethellan	5	20
120	Treviskey and Barrier	130	150
258	Trevean	½	25
256	Trewollack	20	10
128	Trewellard	12	26½
6000	United Hills	5	¾
100	United Mines	300	350
256	Wellington Mines	15	30
128	West Basset	45	28
256	West Caradon	20	168
128	West Cargoll	2	12
512	West Fowey Consols	40	15
256	West Grambler	7	8
256	West Providence	1	20
200	West Seton	40	72½
—	West of Scotland Iron Co.	210	212
120	West Trethellan	5	35
256	West United Hills	2½	4
256	West Wh. Friendship	7½	3
3845	West Wheal Jewel	11	1⅝
2560	West Wh. Maria	2½	1
2560	West Wheal Rough Tor	½	2
256	West Wheal Shepherd	5	2½
256	West Wheal Tolgus	21½	1⅝
256	West Wheal Treasury	19	10
5200	Wicklow Copper	5	12
184	Wheal Adams	41	10
1000	Wheal Agar	—	8
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	2	5
237	Wheal Anderton	16½	26
128	Wheal Ann	—	50⅞
128	Wheal Arvose	3½	5
1024	Wheal Ash	3	12
120	Wheal Bal	5½	20
2560	Wheal Barbara	1½	3
256	Wheal Benny	6½	5
256	Wheal Blencowe	8	8½
256	Wheal Bucketts	20	22
256	Wheal Byon Consols	½	½
256	Wheal Calstock	3	4
136	Wheal Clifford	190	190
128	Wheal Courtenay	—	20
6000	Wheal Curtis	1½	½
256	Wheal Dyke	12	13
256	Wheal Fortescue	5½	8
512	Wheal Fortune Consols	3½	6½
2048	Wheal Frederick	2	2
388	Wheal Franco	27	40
1024	Wheal Grace	3	2½
128	Wheal Harriet	45	50
256	Wheal Jane	21	15
256	Wheal Kekewich	4	4
256	Wheal Louisa	7½	12
112	Wheal Margaret	79	250
256	Wheal Maria (Hayle)	24	12
4000	Wheal Martha Consols	5	2
512	Wheal Mary Ann	5	24
256	Wheal Mary Consols	38	25
256	Wheal Mary (Lanivet)	6½	4
256	Wheal Maude	1½	1½
128	Wheal Pollard	12½	12
210	Wheal Prospect	4	7
120	Wheal Reeth	27	30
128	Wheal Rose	60	45
2048	Wheal Samson	—	20
99	Wheal Seton	214	850
256	Wheal Sisters	29½	35
256	Wheal Sophia	3½	10
128	Wheal Spearne	10	75
128	Wheal St. Ann	9	15
260	Wheal Trelawney	7⅞	108
256	Wh. Tremaine (St. Ervan)	1½	20
256	Wheal Tremayne	35	30
128	Wheal Trew	20	21
256	Wheal Trevenna	3	4
92	Wheal Tryphena	140	265
128	Wheal Venland	12½	10
256	Wheal Vlow (Perranz.)	⅝	⅝
184	Wheal Vyvyan	—	60
256	Wheal Williams	6	18

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	3⅞
15000	Asturian Mining Co.	10	8½
20000	Australian	2	4-4½
10000	Anglo-Mexican Co.	100	2
12374	Ditto Subscription	25	2½
3000	Bolanos	150	6½
2000	Ditto Scrip	15	6½
12000	Brazilian Imperial	22	7
10000	Cobre Copper Co.	40	18
8500	Colombian Co. regis.	55	1
5000	Ditto Scrip	5½	
5000	Copiapo Mining Co.	14	3
10000	General Mining Ass'n.	20	15½
5000	Kinzigthal Mining Ass.	2	2⅝
20051	Mexican Company	59	—
2000	Mexican & South Amer.	7	3
5000	Mocaubas & Cocaes	25	4½-5
29320	Rl. del Monte, regis. / Ditto unregistered	28½	av. 2
	Ditto Red Debentures	—	20
	Ditto Black ditto	—	14
	Ditto Loan Notes	150	97½
7000	Royal Santiago	10	5
2000	Pachuca Mines	4	4½
11000	St. John del Rey	15	6
43174	United Mexican	28½	2

SOUTH AUSTRALIAN SHARE MARKET.

Shares.	Company.	Paid.	Price.	Shares.	Company.	Paid.	Price
2000	Adelaide	5	7½	18	South Para	15	50
600	Barossa Range	4	24	1000	Poonawurta	—	9½-10
2464	Burra Burra	5	110	400	Princess Royal	34	259
436	Grand Junction	15	28	10000	Royal Mining Company	½	1½
200	Greenock Creek	5	12	10000	Royal South Australian	—	55½
100000	Scottish Invest. Co.	1	1½	600	Victoria	2	3

500 Wakefield .... 2 .. 3

SOUTH AUSTRALIA AND NEW ZEALAND.

100000 North British Australasian (Kaw-aw, &c.) .... 1 .. 1-½

**** We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22,500	Australasia	£40	£3	£17½ 18½
20,000	British North American	50	5	45 46
20,000	Colonial	25	5	15½ 16
—	Commercial of London	20	6	22 23
4,000	Ionian State	25	6	24½ 25
60,000	London Joint-Stock	10	6	16½ 17½
30,000	London and Westminster	20	6	26½ 27
10,000	National Provincial of England	35	5	36½ 38
20,000	National of Ireland	22½	5	19 19½
20,000	Provincial of Ireland	25	8	44½ 45
4,000	Ditto New	10	8	16
20,000	Union of Australia	25	6	24 25
10,000	Ditto New	2½	6	2½ 3½
60,000	Union of London	10	5	12½ 13½

LATEST CURRENT PRICES OF METALS.

LONDON, AUGUST 20, 1847.

	£ s.	£ s. d.		£ s.	£ s. d.
IRON—Bar a..Wales..ton	8 12	6 8 15 0	COPPER—Ordin. sheets, lb.	0 0—	0 0 11
„ ..London ..	0 0—	9 10 0	„ bottoms .	0 0—	0 0 12
Nail rods „	0 0—	10 10 0	YELLOW METAL SHEATHING	0 0—	0 0 9½
Hoop (Staf.) „	0 0—	11 15 0	TIN—Com. blocks g..cwt.	0 0—	4 8 0
Sheet „	0 0—	13 0 0	„ bars	0 0—	4 9 0
Bars „ „	0 0—	11 5 0	Refined	0 0—	4 11 0
Welsh cold-blast foundry pig ..	4 10—	5 5 0	Straits h	0 0—	4 4 0
Scotch pig b, Clyde	3 8—	3 10 0	Banca	0 0—	4 6 0
Rails, average	8 10—	9 0 0	TIN-PLATES—Ch., IC i, box	1 8—	1 10 0
Russian, CCND c..	0 0—	——	„ IX ...	1 14—	1 16 0
„ PSI	0 0—	——	Coke, IC	0 0—	1 5 0
„ Gourieff	0 0—	——	„ IX	0 0—	1 11 0
„ Archangel	0 0—	13 10 0	LEAD—Sheet k ......ton	0 0—	19 10 0
Swedish d, on the spot	11 5—	11 10 0	Pig, refined	0 0—	20 5 0
„ Steel, fagt.	0 0—	16 5 0	„ common	0 0—	18 10 0
„ „ kegs e	14 15—	15 0 0	„ Spanish, in bd.	0 0—	18 0 0
COPPER—Tile f	0 0—	97 0 0	SPELTER—(Cake) l on spot	19 7 6	19 10 0
Tough cake	0 0—	98 0 0	„ „ for arrival	19 2 6	19 5 0
Best selected	0 0	101 0 0	ZINC—(Sheet) m export.*	0 0—	27 0 0
			QUICKSILVER n ....lb.	0 0—	0 4 6

a Discount 2½ per cent. b Net cash. c Discount 2½ per cent. d Ditto e In kegs ½ and ¾-inch. f Discount 3 per cent. g Ditto 2½ per cent. h Net cash in bond. i Discount 3 per cent. k Ditto 2½ per cent. l Net cash. m Discount 1½ per cent. n Discount 1½ per cent. * For home use it is 32l. per ton.

[From our Correspondent.]

IRON.—A good business done in Welsh this week: all the makers are full of orders, and prices firm. Scotch is rather more in demand, and sales of mixed numbers are reported at 70s. In other descriptions, no change.

TIN.—Both English and Foreign continue in good demand, and business in each daily doing at quotations.

SPELTER is dull, and full 10s. lower than last week, occasioned, no doubt, by the state of the money market, which is quite a barrier to purchases for exportation, for which no business of the least importance has been done during the last four weeks.

Other metals remain steady, at last week's quotations.

GLASGOW PIG-IRON TRADE, AUGUST 19.—The continued tightness of the money market still presses heavily on the article of Pig-Iron. The business done this week has been very limited. The tone of the market seems rather improved to-day: the price for mixed Nos. may be quoted at 68s. to 68s. 6d.—for cash.

THE IRON TRADE.—Notwithstanding the depressed state of the money market, we are happy to find that the iron trade of South Staffordshire continues in a healthy and prosperous condition; the manufacturers are full of orders, and the demand more than keeps pace with the make. This state of things, combined with the prospects of an abundant harvest and good trade, cannot fail to maintain the top quotations for all descriptions of iron; and purchasers are extremely anxious to have their orders executed at the prices agreed upon at the commencement of the present quarter. As regards the foreign trade, we learn that large orders continue to arrive with every packet from America; and as these, for the most part, come through Liverpool merchants, the greater portion of them find their way into this district. Amongst all the vicissitudes which have affected various branches of industry in this country—inflicting ruin on capitalists, and subjecting the operative classes to the most severe privations, it is cheering to find, that the staple trade of our iron district has continued firm amidst all commercial mutations, and that the working classes of South Staffordshire have enjoyed, on the whole, a singular and happy exemption from the general and wide-spread distress.—*Birmingham Journal.*

PRICES OF METALS IN AMERICA.

NEW YORK, JULY 31, 1847.

	$ cts.	$ cts.		$ cts.	$ cts.
COPPER—Sheathing ....lb.	0 23½	— 0 0	IRON—Engl. & American..	0 5½	— 0 6
„ Old	0 18½	— 0 19	„ Hoops do.......cwt.	5 50	— 6 50
„ Braziers'	0 24	— 0 25	NAILS—Cut 4 dn. 40 ....lb.	0 4½	— 0 4⅞
„ Pig	0 18	— 0 0	(3d 1 c. & 2d 2 c. more)		
„ Bolts	0 24	— 0 25	„ Wrought, 6 to 20....	0 10	— 0 14
LEAD*—Pig	4 12½	— 0 0	„ Horse-shoe	0 17	— 0 21
„ Bar	0 5	— 0 5½	SHOT—Patent	0 5½	— 0 0
„ Sheet	0 5½	— 0 0	„ Buck	0 6½	— 0 0
IRON—Pig, Eng. & Scotch...	0 0	—30 0	SPELTER—In plates	5½ 0	— 0 0
„ „ American, No. 1	0 0	—32 50	STEEL—German......lb.	0 10½	— 0 13
„ „ common 25	0	—27 50	„ English Hoop L....	0 13	— 0 13½
„ Bar, RPSI...... 100	0	102 50	„ Spring	0 5½	— 0 5¾
„ „ Swedish	0 0	—87 50	„ Trieste ......boxes	0 0	— 0 0
„ „ American, old..85	0	— 0 0	„ American	0 4½	— 0 5
„ English refined 85	0	— 0 0	TIN—Block, South Amer. lb.	0 0	— 0 0
„ „ common 72	50	—75 0	„ Ditto, East India ...	0 0	— 0 0
„ Sh. Russian, 1st qual.	0 11½	— 0 12	„ In plates, ½ dx. bx. ..	9 0	— 9 25

* Duty—Pig and bar, 3½; old and scrap, 1½; sheet, 4 cts. per lb.

LEAD ORES

Sold at Aberystwith, on the 12th August, 1847.

Mines.	*Tons.*	*Amount.*	*Purchasers.*
Goginan	65	£14 17 6	Newton, Keates, & Co.
East Logylas	125	11 0 6	Tamar Smelting Co.
Sold at East Rose, on the 13th August, 1847.			
Cargoll	112	£14 10 0	Tamar Smelting Co.
ditto	10	11 1 0	Michell & Son.
North Rose	32	16 11 6	ditto
Sold at Holywell, on the 14th August, 1847.			
Isle of Man Ores	120	£11 4 0	Walker, Parker, & Co.

BLACK TIN.

Mines.	*Tons.*	*Price per ton.*	*Purchasers.*
Drake Walls	4½	£47 5 0	Daubuz and Williams.
ditto	7½	36 0 0	Calenick Smelting Co.
ditto	4½	22 0 0	Ditto and Williams.
ditto	1	20 0 0	Calenick Smelting Co.
St. Agnes Consols	18½	43 7 6	Ditto; Daubuz; Williams.
ditto	1½	35 5 0	Calenick Smelting Co.

COPPER ORES.

Sampled August 4, and Sold at Andrew's Hotel, Redruth, August 19, 1847.

Mines.	*Tons.*	*Price.*	*Mines.*	*Tons.*	*Price.*
Devon Gt. Cons. Wh. Maria	120	£7 11 0	West Caradon	103	£6 8 0
ditto	110	8 5 6	ditto	77	6 18 6
ditto	88	7 4 0	ditto	70	6 12 6
ditto	72	7 17 6	ditto	48	9 4 6
ditto	60	8 7 6	ditto	24	4 0 6
ditto	56	6 17 0	Fowey Consols	106	6 16 6
ditto	20	2 19 6	ditto	105	6 8 0
Wh. Josiah	112	7 17 6	ditto	99	5 6 0
ditto	104	6 3 0	Wh. Friendship	102	7 1 0
ditto	78	10 8 6	ditto	72	10 6 6
ditto	73	5 17 6	ditto	61	9 16 0
ditto	38	5 19 6	Marke Valley	130	3 4 0
Wh. Fanny	94	6 7 0	Bedford United	104	9 12 0
ditto	75	7 13 6	Holmbush	64	5 13 6
ditto	40	5 9 6	Wh. Gorland	12	8 3 6

TOTAL PRODUCE.

Devon Gt. Cons. —Wh. Maria, Wh. Fanny, Wh. Josiah	1140	£8344 13 0	Wh. Friendship	235	£2060 6 0
			Marke Valley	130	416 0 0
			Bedford United	104	998 8 0
			Holmbush	64	363 4 0
West Caradon	322	2195 11 6	Wh. Gorland	12	98 2 0
Fowey Consols	310	1888 7 0			

Average Standard ....£ 95 12 0 | Average Produce 10½

Average Price per ton £7 1 0

Quantity of Ore .... 2317 tons. | Quantity of Fine Copper, 237 tons 17 cwts.

Amount of Money £16,364 11 6

LAST SALE.—Average Standard......£106 16 0.—Average Produce 8½

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Mines.	Tons.	Amount.
Mines Royal	94	£ 610 13 0
English Copper Company	267	1801 6 0
Vivian and Sons	216	1423 12 4
Freeman and Co.	215	1352 10 6
Crown Copper Company	43	138 13 4
Sims, Willyams, and Co.	557	3863 7 3
Williams, Foster, and Co.	923	7174 9 1
Total tons	2317	£16,364 11 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1170—South Caradon 354—Tresavean 286—Par Consols 283—West Wheal Jewel 184—Treleigh Consols 174—West Trethellan 80—South Tolgus 35—North Downs 16—East Downs 9.—Total, 2591 tons.

Copper ores for sale on Thursday week, at Serpell's Hotel, Pool.—Mines and Parcels. —North Roskear 941—Consolidated Mines 690—Tincroft 405—Wheal Seton 282—Fowey Consols 268—South Wheal Francis 263—Creeg Braws 178—South Roskear 111—Wheal Bucketts 100—Lanivet Consols 93—Wheal Harriet 74—South Wheal Basset 56—East Seton 44—Wheal Busy 42—Wheal Tryphena 27—Tretoll 12—Wheal Catherine 6.—3594.

COPPER ORES.

The following are the Companies by whom the Ores were Purchased, at the SWANSEA SALE of August 12, 1847:—

	Tons.	Amount.
English Copper	185	£4434 11 6
Freeman and Co.	96	1046 16 0
Grenfell and Sons	254	[illegible] 10 2
Sims, Willyams, and Co.	200	3481 0 0
Vivian and Sons	725	10615 4 8
Williams, Foster, and Co.	570	[illegible] 7 8
Total tons	[illegible]	£[illegible] 16 0

Copper ores for sale August 26.—Cobre 96, ditto 91, ditto 80, ditto 72, ditto 44, ditto 6. —Knockmahon 118, ditto 103, ditto 63, ditto 61.—Burra Burra 76, ditto 67, ditto 60, ditto 50, ditto 16, ditto 3, ditto 53.—Berehaven 108, ditto 96, ditto 92.—Cuba 93, ditto 85, ditto 65.—Cronebane 53, ditto 41, ditto 38, ditto 26, ditto 24, ditto 4, ditto 2.—Tigrony 2. —Copiapo 93, ditto 63, ditto 46.—Kapunda 96, ditto 53, ditto 14.—Holyford 90, ditto 50. —Sydney 92.—Chili 61.—Luckamore 30, ditto 11.—Aberdovey 24.—Ballymurtagh 4.—Total, 2521 tons.

NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed— To the Editor,
Mining Journal Office,
26, Fleet-street, London.

Also, to avoid trouble, Post-Office Orders should always be made payable to William Salmon Mansell, as acting for the proprietors.

"F. N. D."—The Wheal Maria shares are quoted under the name of Devon Great Consols—that being the title of the company owning the mines.

Mr. G. N.—The statement can only appear as an advertisement.

"M." (Truro).—We are obliged by the transmission of all local intelligence, as also newspapers, containing matters interesting to our readers.

The Mining Journal is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, AUGUST 21, 1847.

Our correspondent, "A Flintshire Lead Smelter," in his communication in last week's Journal, accuses us of promulgating fallacies in our statements, relative to the mode of selling lead ores at Swansea; and, having since made inquiries, which have put us in possession of correct information, we unhesitatingly repeat, that those statements were substantially correct; and it is clear that the object of the "Flintshire Lead Smelter" is to mystify the subject, prevent further discussion, and keep things as they are. It is true that lead ores are sold in the Dee market by tickets, and upon certain appointed days; but the number of bidders now *never* exceeds *four*, and for certain classes of ore is limited to *two* (perhaps our "Flintshire Lead Smelter" is *one*); and nothing like competition, therefore, exists. With respect to the fall in the price of ore, we are prepared to prove our *fallacious* statements from the ticketing (?) papers. On the 22d March last, a parcel of Logylas ores, assaying 75 per cent., sold for 10*l.* 18s. 6d. per ton; and, in April, a similar parcel, 11*l.* per ton—thus averaging 10*l.* 19s. 3d.; while, on the 16th of June, two parcels from the same mine, assaying 76 per cent., obtained only 8*l.* 17s. and 9s. 1s. 6d. respectively, averaging 8*l.* 19s. 3d. per ton—thus, with the higher produce, showing a fall of 20 per cent. within a fraction. Then to take a richer ore:—a parcel from Llanfair was sold in March for 25*l.* per ton, and only 21*l.* in June. There has been certainly no equivalent fall in Cornish silver-lead ores. There has been, and is, a sad want of vigour in the lead ore trade in North Wales; more smelting-houses are wanted, especially one in the locality of the Whitehaven coal-field, to take the ores from the Isle of Man, the Cumberland districts, the north of Ireland and Scotland. The business is simple, and involves no very heavy capital; and very little improvement has taken place in the manipulation for the last 50 years. We shall continue our endeavours to obtain every information, and keep alive the subject, which we consider of the first importance, more particularly as large unexplored silver-lead districts in both North and South Wales are likely soon to be brought into productive operation. Some improvements in silver-lead smelting are also expected soon to be introduced, in which the condensation of the vapours is the principal object.

We have had our attention directed to an article in the *South Australian Register* of January 20th last—the tenor of which is to show the great importance of establishing a direct communication between Adelaide and Swansea, in order that the copper ores of the colony may be transported, in the most economical way, to "the great copper smelting mart in Wales." The writer of the article in question, states the principal impediments to this desirable object to be, the want of accommodation in the port of Swansea for vessels suitable for foreign voyages—the harbour being a tidal one, and that not of the best description, where the vessels ground on the reflux of every tide—and the want of suitable, manufactured goods to reload them on their outward voyage. These are, certainly, very serious objections; and the writer goes on to say, that "many vessels object altogether to chartering for Swansea; and the generality of vessels demand a largely-increased freight in chartering from South America to Swansea above the current freight to Liverpool—the practical result of which is, that copper ores are shipped from South America to Liverpool, whence they are transhipped, at great cost and loss, to Swansea in coasters." Now, in the latter part of this paragraph, the writer, either from ignorance, or some motive of his own, overlooks the fact of there being copper smelting-works, and a "mart for copper ore" at Liverpool, and that three-fourths of all the South American ore imported into Liverpool is sold and smelted on the spot—thus not only saving both the "cost and loss" of transhipment to Swansea, but securing a more speedy return for the capital invested. In fact, no importer, or consignee, of ore into Liverpool, who is free to deal with the article in the most advantageous manner, ever dreams of sending it for sale to Swansea, while he can obtain an equally good price at his ship's side in Liverpool. The fact of copper ore being saleable at Liverpool, at prices equal to what it is at Swansea, we think is not sufficiently known, if known at all, in South Australia; for to Liverpool, which is now the greatest port in the world, vessels readily charter from any part of the globe at the lowest current rates of freight; and there is no port which offers so great a choice of outward cargo to reload the ships that have discharged therein. Instead, therefore, of our mining friends in South Australia troubling themselves in establishing a direct intercourse with Swansea, we recommend them to avail themselves of the much greater facilities which Liverpool offers ready to their hands; and the more so, as at Liverpool there is a market for lead ore, as well as for copper. The lead ores which have been sent to London from South Australia, have been transhipped either to Liverpool or to Newcastle-upon-Tyne. In several points of view, we consider this an important matter, and recommend it to the attention of those engaged in foreign mining, and hope again to refer to it.

We have much pleasure in calling attention to an article in another column, on the progress and improvements which have been made in the elastic atmospheric railway tube, which we have adverted to on many former occasions; and, as we consider that the system of atmospheric propulsion is by this invention practically established, we here make a few remarks on its economy. That the stationary engine, as to economy, is far superior to the locomotive, is now universally allowed; and, admitting the complete success of the elastic tube, we have here increased economy for every improvement made in the stationary engine. There are, at the present time, many of our first-rate Cornish engineers, who would guarantee to construct engines suitable for atmospheric railways, which shall consume only 3 lbs. of coal per horse power per hour—thus the power is generated under the cheapest possible conditions, and that power applied with the least possible loss; while, on the locomotive system, full 50 per cent. of the power is wasted in moving the engine and tender. For wear and tear, on the elastic tube system, the cost would not exceed 12*l.* 10s. per mile per annum, and that would be for repairs to the stationary engine; while, on the locomotive system, it is, perhaps, near 400*l.* per mile per annum The heaviest weight on one pair of wheels would be scarcely 2 tons, while the driving wheels of a locomotive engine have to bear 12 tons—thus reducing the cost for maintenance of way in the proportion of 12 to 2. These are not mere theoretical surmises, but practical facts, as the working on the Blackwall, and other lines, fully proves. The principal failure hitherto, in carrying out the atmospheric railway successfully, has been the inefficiency of the valve and joints. The elastic tube has overcome this, and every other, difficulty; and to decry the system itself, because bad machinery has been constructed, would be as reasonable as to say, a locomotive engine could not travel 10 miles an hour, because in the early days of their construction they could not accomplish *five*.

We have, in another place, noticed a pamphlet by Mr. Bermingham, on the means of improving Ireland and the Irish, and we cannot help calling attention to the importance which would attach to the introduction of this system into both Ireland and America—in the latter country particularly, the forests would supply timber for rails, and lines of railway might be constructed for a mere trifle, compared with the benefits they would hereafter confer. Convinced, as we are, of the soundness of the theory of atmospheric traction, and of the perfect capability of the elastic tube for carrying it out, we shall now wait, with some anxiety, to see it taken up for useful purposes, as we understand several negociations are going on with directors of new lines of railway, as to its adoption.

Although we have more than once pointed, with a tolerably clear finger, to the causes which have produced the present stiffness in the monetary interests of the kingdom, we have never supposed that the whole of the particulars were enumerated, or that we had, in any sense, exhausted the subject. Undoubtedly, the blow imposed on our industry, by the late Irish calamity, is one under the effects of which we are still staggering; and considering the force and concentration of the stroke, the wonder is—not that we reeled so deeply, but rather that we rallied so quickly—and that this gallant nation is nearly up again, and training its lately-tested powers for the next encounter, which Providence may appoint us in our long and brilliant march to empire. With tackle a little torn we are rapidly reaching to windward, having stood up against the vigorous dawn, and the mid-day strength, and the concluding fury of the great Irish storm. It was in this tempest certainly, and in no other, that the wounds, which at this moment mar the national visage, were received. It was not the absorption of our capital in *mines*, or *railways*, or in any other branch of industrial occupation, that straitened our resources, and lowered the money pulse of this industrious people. On the contrary, the sums dedicated to these reproductive works have sustained the imperial revenue, and fed the labouring masses throughout the crisis, from which we are now emerging. The plain, the demonstrative truth, is just this—that to moderate the severity of the Irish visitation, we were driven into the market of the foreigner, where we must needs accomplish our errand. We had no option; for, however immediately, and in whatever form, payment was to be made, it was our solemn duty to import breadstuffs, in quantities commensurate with the breadth of our unparalleled necessity; in fact, we laid out in the foreign market a sum nothing short of 15,000,000*l.* sterling. This turned at once the balance of trade and the foreign exchanges against us; to restore the *statu quo*, and discharge the debts incurred by the extent of our cereal importations, we have now, for some six months past, been heavily exporting the precious metals. This is, as we think, a fair and a clear statement of the case; and how, in the presence of cause and effect, so intelligible and so traceable, in the face of circumstances so notorious, the great political journal of the day can attribute our money difficulties to the outlay on *mines* and *railways*, to either, or to both, is to us at once amazing and deplorable. But things are changing—to all human appearances the god of harvests is about to fill our barns with plenteousness. Let us secure that blessing; and then let us see if the tide of wealth, which has been ebbing from us westward across the Atlantic, and eastward into the Black Sea, does not flow back again upon our shores to reinvigorate and revive the whole circle of our commerce. Our expectation is, that every week's quotation of shares will, from this date, be an improvement upon the preceding quotations; that the wealth won this year from the soil will restore us—not to the point at which we were in 1845—but will do much to bring us near to that desirable eminence; and, for ourselves, with this assured hope, we shall wait and watch the growth of events, and witness, unless we greatly err, the rapid re-establishment of the national fortunes, expressing, at the same time, our conviction, that they have been shaken very little, and impaired not at all, by the sums expended on *mines* and *railways*.

In another part of this day's Journal will be found a report of the annual meeting of the Universal Salvage Company, and which, we are happy to say, terminated with much more likely symptoms of conciliation and arrangement than have been witnessed at many former meetings. Our readers will remember that this company was formed for working a patent obtained by Capt. Austin, for raising sunken vessels, and which plan always has been, and is still considered to be, a most valuable one, had it been but carried out with anything like spirit, and with unanimity among the shareholders and directors. Unhappily, differences arose among them, and for several years business has been little more than dumb-show. We trust, however, that now, even at the eleventh hour, a better feeling is evincing itself: the admission of reporters on this occasion, which was agreed to by a majority on a show of hands, is, we trust, a precedent for the future, and a guarantee of reformation; and it is much to be hoped, as it is to be desired, that by the directors together giving up claims to about 1000*l.*, and the shareholders freely coming forward with their deposits and calls due, the company may be immediately freed from debt, and be yet placed in a position to carry out the objects for which it was established, to the benefit of themselves and the public, as it will now be placed under the direction of the patentee.

We have frequently attempted, by our advocacy of the mineral districts of Wales, to direct attention to mining generally in this important portion of Great Britain. We have done this from a personal knowledge of the mineralogy, of the mountainous parts especially, of the principality—the facility afforded by its position, and the preference which we give to the employment of native industry, to that of exploring the ill-remunerating mines in foreign countries. Although there are a great many highly-productive mines in course of operation, still mining may be considered as being in its infancy there; and there appears to be generally an indisposition on the part of the natives, or local residents, to make a sufficient outlay of capital to bring a mine into a state of permanent working and profit—this we attribute to the fact of the facility afforded of opening on the lodes, and obtaining immediate returns, and a disinclination to expend the profit once realised in the erection of machinery, sinking of shafts, or extension of levels, to render the same a good and lasting mine. We are drawn to these remarks, from the knowledge of several mines of late which were in that position, and have now passed into the hands of those who, by perseverance and judicious employment of capital, will, no doubt, make them a source of permanent wealth; and, therefore, notice the recent purchase of the Bwlch Consolidated Mines (adjoining the well-known Goginan Mines), in Cardiganshire, by a London company, who immediately commenced the erection of the necessary machinery and requisite appliances, which alone precluded the former proprietors from obtaining more than a decreasing monthly profit, which, to the present company, will ultimately become one of increase and stability. As we purpose going into further notice of these mines, we shall, in passing, merely observe, that the Dyfngwm Lead Mine, in Montgomeryshire (a report and notice of which will be found in another column), was dragging out a slow existence, until the present enterprising company obtained possession. Carmarthen Consols, near the town of Carmarthen, may be looked upon as in a similar position; but, as we purpose entering upon this matter again, we shall be prepared with such statistical information that will fully bear out the subject proposed.

Sheathing for French Vessels.—The Minister of Marine has given orders that several experiments shall be made to test the quality of copper sheathing employed in England and France, for the coppering of vessels, as that at present used in the French Navy and merchant service soon corrodes, as has been proved by the recent report on the state of the bottoms of the steamers, frigates, and other ships of war, where French copper has been employed instead of British, as hitherto, and will have to be recoppered as soon as the superiority of the one over the other is fully proved. The copper manufactured in France is of a very soft nature, very corrosive, and but little adapted, either for marine purposes, boilers, or steam-engines, if not mixed with English metal.

Letters from Amsterdam mention that the Minister for the Colonies has opened negotiations respecting the purchase of the produce, during the next 10 years, of the Banca Tin Mines.

We learn, by the *Lake Superior News*, of June 26, that Mr. O. H. Mathews, late of Cornwall, now the chief representative of the Quebec and Lake Superior Company, has been out there several weeks, making the Sault Ste. Marie his head quarters.

The *St. Petersburgh Journal* of the 6th says—"During 1846 a new stratum of gold sand was discovered at a short distance from the village of Konnara, and the mine of Verkh-Neivinsk. It is situated near the high road which leads through the wood near the latter place. The stratum lies very near the surface. It bids fair to be a very valuable discovery."

Copper Ore from China.—The vessel, *Mary Bannatyne*, just arrived from Canton, has brought, in addition to a general cargo of merchandise, 50 tons of copper ore, the production of the Chinese Empire—should this be the white copper of China, it will prove a novel and interesting importation.

The Copper Trade.—We have seen letters from Valparaiso, received from a leading house, from one of which we give the following extract:—"Copper ores are in good demand for Hamburgh and North America, and very little procurable. The smelters from both countries are very anxiously writing for supplies, and reports are favourable of the result of this new branch of industry, that the copper ore duties in England have opened."

The *Revue du Havre* states that a young chemist of that town has invented a system of lights for ports and coasts, consisting of a thick globe of glass, in which is enclosed a preparation giving a light like that of the moon, and the cost of which for one year will not exceed a franc.

The Duke of Northumberland, on Thursday last, paid a visit to the locomotive engine manufactory of Messrs. Stephenson and Co., in this town, and inspected the mechanical arrangements of that extensive establishment, with which his grace expressed himself highly gratified.—*Newcastle Journal.*

Mr. Brunel, engineer to the Great Western Railway Company, went over the line between this city and Cheltenham on Sunday last, and we understand that trains will be worked between the latter town and the metropolis on and after the 25th inst.—*Gloucestershire Chronicle.*

Fall of Railway Arches.—On Tuesday, four arches of a section forming to cross the River Croal, on the Blackburn, Darwen, and Bolton Railway, fell, and killed two labourers. One, Jonas Pilling, was killed on the spot; the other, Thomas Morris, died about two hours after the accident.—*Hull Packet.*

The Emperors of Russia and Austria have forbidden any person or company to construct lines of magnetic telegraph in their respective dominions, without their special permission.

The directors of the New York and Buffalo Telegraphic Company, at their recent meeting in Utica, resolved to use in their operations an iron wire known as No. 10, weighing about 250 lbs to the mile. The English companies adopt a wire called No. 7, which is much heavier and more lasting.

Telegraph Charges in America.—When the Wheeling line is completed the charges will be as follows:—From Wheeling to Pittsburg, the toll for 10 words cost some 20 cents; from Pittsburg to Philadelphia, 50 cents for 15 words or less; and from Philadelphia to New York, 25 cents for 10 words. To get 10 words from Wheeling to New York costs 90 cents, which is too high. We should like to see all the companies agree upon uniform rates of charging; and the best method for this purpose would be to charge two, three, four, or five cents for each word in a communication, and leave it to the writer to send as many or as few as he pleased. This should be done, for it is said the question has been agitated with some of the companies of abolishing the use of all systems of abbreviations on their lines. This, however, they cannot do, for no one will allow the companies to prescribe what they may and may not send over the wires.—*American paper.*

Sale of Scrip and Letters of Allotment.—At the late Cork Assizes an important case was tried, but the jury could not agree; however, sufficient crept out in the course of the trial to show that the feeling of the court and the jury also was with the defendant. The facts may be briefly stated thus:—In the autumn of 1845, a project was started in England under the name of the Bridgewater and Minehead Railway Company, and the prospectus was duly published and advertised in most of the leading papers. Of course, there were numerous applications for shares; and, on the 10th of October, 1845, the scrip was issued in England. Mr. M'Ostrich, of Cork, seeing the scrip going up to a premium, gave an order to Mr. Burke, a sharebroker in that city, on the 26th of October, to buy 30 or 40 Bridgewater and Minehead scrips, at 7*s.* 6*d.* premium Mr. Burke, on the same day, contracted with Messrs. Meade and Townsend, sharebrokers, for the purchase of 20 Bridgewater and Minehead scrips, and informed Mr. M'Ostrich that he had purchased 20 scrips. It appears that Messrs. Meade and Townsend had not the scrips to deliver. They had received a letter of allotment; and it seems to have been understood between them and Mr. Burke that when the deed arrived in Cork for execution they would deliver the scrips. The deed, however, did not arrive in Cork till the 15th day of December; but Mr. M'Ostrich had previously, on the 18th November, written to Mr. Burke, to say that if the scrips were not delivered before the 22d of that month, he would not receive them. Mr. Burke called on Mr. M'Ostrich, on the 19th of November, to say he could not deliver the scrips until the deed arrived in Cork, as the party from whom he had bought could not deliver the scrip until he signed the deed. Mr. M'Ostrich replied that, when he gave the order, on the previous 26th of October, the scrip had been issued in the English market, and that he had not restricted Mr. Burke to the Cork market only; and that if the scrips were not delivered on or before the 22d November, he would not have them. Mr. Burke, notwithstanding, did not tender the scrips until the 26th of December, when Mr. M'Ostrich refused to receive them; and, consequently, as Mr. Burke had paid Messrs. Meade and Townsend, he brought his action for the amount against Mr. M'Ostrich. The jury, after remaining closeted for several hours, came into court, and informed his lordship that there was no possibility of their agreeing. They were then discharged by consent.

Charge Against a Workman for Bad Work.—At the Wednesbury Public Office, West Bromwich, on Tuesday, Joseph Williams, a journeyman in the employ of Messrs. Davis, ironmasters, of West Bromwich, was summoned to answer a charge of causing considerable loss to his employers by bad work. It appeared from the evidence of Joseph Heritage, the manager, and David Langston, a clerk in the works, that Williams is what is termed a merchant roller, and that his duty is to roll iron into rods of certain lengths and diameter, and whose goodness and marketable value depend upon the skill and accuracy with which this is performed. As to the efficiency of the defendant no doubt could be entertained: for, on his offering himself to the present firm, having left the employ of the Messrs. Williams, of the Smethwick Iron-Works, he had been at once engaged at an advance in price upon the usual terms, receiving 5*s.* 6*d.* per ton for rolling. On a former occasion he had worked for his present masters, and then, as now, a dispute occurred as to the working the iron at the large or the small mill. Upon this point seemed to hang the merits of the case, and the question was a serious one, as the damage done amounted to about 10*l.* It appeared, however, that the damage had resulted from his having given the work to his under-hand to do, who had not experience enough, and who, besides, had no right to roll it at all. The bench, in consideration of the circumstances of the case, and of the defendant's good character, merely inflicted the penalty of 50*s.*, and the expenses of the proceeding.

Natural Gas Jets.—A correspondent informs us, that in the village of Wigmore in Hertfordshire, U.S., there are fields which may be, and two houses which really are, lit up with a natural gas. This vapour, with which the adjacent strata seems to be charged, is obtained in the following manner:—A hole is made in the cellar of the house, or other locality, with an iron rod; a hollow tube is then placed therein, fitted with a burner, similar to those used for ordinary gas lights—and immediately on applying a flame to the jet, a soft and brilliant light is obtained, which may be kept burning at pleasure. The gas is very pure, quite free from any offensive smell, and does not stain the ceilings, as is generally the case with the manufactured article. Besides lighting rooms, &c., it has been used for cooking; and, indeed, seems capable of the same applications as prepared carburetted hydrogen. There are several fields in which the phenomenon exists, and children are seen boring holes, and setting gas on fire for amusement. It is now about 12 months since the discovery was made; and a gay at many of the curious have visited, and still continue to visit, the spot.

Extraordinary Grain.—In some of our English contemporaries we have seen paragraphs relating to the extraordinary size of the grain crops in different localities. On the farm of Bwich, in the parish of Abergwilly, in this county, in the occupation of the owner, Mr. William Williams, there are crops which will not suffer by comparison with those we have mentioned. On the farm in question there is a crop of wheat, the length of the stalk being 6 ft. 2 in., the ear being 7½ in. long, and containing 66 corns. On the same farm an oat ear has been found containing 270 corns, the length of the stalk being 6 feet; and this is the size of the greater part of the crop.—*Carmarthen Journal.*

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

The *Union*, of St. Etienne, of last Sunday, announces that a judicial investigation into the complaints made against the Company of the Mines of the Loire is about to take place. I have not yet had time to ascertain whether this statement be true or false; but the probability is, that it is well founded, as it is made by a journal, which, on local matters, is generally well informed. If true, the investigation has, no doubt, been undertaken, if not by the express order, at least by the tacit permission, of the Government. The St. Etienne paper warmly congratulates its readers on the measure, which it seems to imagine will be the death blow of the company; but I apprehend a very different result. Even if all the sad things that are said of the company be true, it will, I am certain, be found too strong to be put down easily.

The following questions are represented to contain the sum and substance of all the weighty accusations heaped on the company:—"1. What means did it employ to distribute the shares which were created on the foundation of the groupes of mines, which have since united?—2. Has not the *personnel* of the company been formed without any regard to personal merit or acquired rights? In organising it, were not the solicitations of intrigue more listened to than the just inquiries of good management? (Supposing that were so, what is it to the public?)—3. Is not the existence of the miners abandoned to the caprices and selfishness of the company? Have we not to deplore the absence of the guarantees and of the securities, so necessary to their present and future welfare? Why have not the promises in their behalf, which were so emphatically made, been realised?—4. Is not the public consumption given up to the omnipotence and selfishness of the company?—5. Is the position of the dissenting lessee of coal-pits tenable? Are not their complaints disregarded—their interests threatened with ruin—because they have thought it right not to make certain sacrifices, and not to yield to certain intrigues?—6. Lastly, have not the different branches of industry of the locality, and especially that of metallurgy, everything to fear from the projects of the company?" From this string of questions one of two things is very clear—either the complainants against the company have not a very strong case to make out, or they have not the knack of putting it in a very strong manner.

The company on its part is not slow in defending itself against the incessant attacks of which it is the object. It has lately published two volumes in its defence—in one of which it pleads its cause with arguments and figures; and, in the other, produces a mass of laws, ordinances, legal and ministerial decisions, &c., to prove the legality of its existence. As the matter is of very considerable importance, not only to the shareholders of the company (among whom, I understand, are many Englishmen) but to the public at large—and as also the question is of considerable interest to all persons concerned in the working of coal mines—I have prepared a rather full abstract of the company's publication, which I send to you, in the hope that you will be able to find room for it.—(See the article, "Coal Mines of the Loire," in another column.)

It is stated that, in consequence of the recent scandalous disclosures that have been made, the Government has determined that, for the future, all concessions of mines in Algeria shall be put up to public competition. If this be true, it will engender a multitude of companies similar to those which were called into existence by railways, and will lead to no end of gambling speculation.

The civil tribunal of the Seine has declared the dissolution of the company formed for working the coal mines of Bully and Fragny, in consequence of squabbles between the shareholders—some refusing to pay up their calls, &c., &c.

M. Talabot, the ironmaster, is very severely blamed for having taken upon himself, as a director of the Lyons and Avignon Railway Company, to say that the shareholders would accept the arrangement proposed, with respect to the line, though, to get out of that arrangement, they have taken the extreme step of dissolving the company. *Query*—Did M. Talabot expect to have the privilege of supplying the company with rails, chairs, bolts, &c., &c.?

The newspapers publish an extract from a St. Petersburgh journal, stating that a new deposit of very rich auriferous sand was last year discovered at a short distance from the village of Kounara, and at 30 verstes from the mine of Verkh-Neivinsk. The yield is said to be 19$\frac{88}{100}$ *zolinks* of gold per 100 *pouds* of sand, and the deposit is represented to be of some extent.

The shareholders of the furnaces, &c., of Gougnies, are convoked in general assembly for 15th September next. The shareholders of the furnaces of Valence are to have a meeting on the 22d, for the purpose of taking measures for raising a loan. Those of the Hauts-Fourneaux of the Rhone and the Loire are to meet on the 25th; and those of the Mines Royales of Villefort and Vialas on the same day.

The St. Dizier letter of the 12th, says:—"Our establishments will, probably, be without demands until after the adjudication of wood shall have taken place, unless a decline in prices shall cause dealers to buy. The last quotations are maintained. The adjudication of the wood of the king's private forests will take place on the 9th September.

Within the last fortnight of the present month the Alais (Gard) Iron-Work and Coal Mine shares have been done at 2100 fr.; the Decazeville Iron-Works, &c., at 5400 fr. (a premium of 2400 fr. per share); the Allevard Iron-Works at 6940 fr. (cost of share 5000 fr.); the Nord Iron-Works, 1350 fr. (1000 fr. shares); the Iron-Works of Monceaux, in Belgium, 1970 fr. (1000 fr. share); the Loire and Ardeche Iron-Works, 6900 fr.; and the Montataire Iron-Works as usual, with no sellers. The Vieille Montagne (zinc) have been done at 5830 fr. (1000 fr. shares); the Nouvelle Montagne at 1200 fr. (1000 fr. shares); the Grande Montagne, 1050 fr. to 1200 fr. (750 fr. per share paid up); the Stolberg, 1350 fr. (750 fr. shares.); the Company Valentin Cocq, 875 fr. (500 fr. shares). The shares of the Blanzy Coal Mines were done at 1950 fr. (1000 fr. shares); and the Compagnie Generale of the Loire at only 670 fr., though the shares are nominally 1000 fr.—*Paris, Wednesday.*

BELGIUM.—A royal ordinance has just authorised, as a *société anonyme*, the company for working coal-pits at Belle Vue, Baisieux, Dour, and Thulia, which was formed the 17th May last. The capital of the company is fixed at 4,500,000 fr., in 9000 shares, of 500 fr. The duration of the *société* is fixed at 90 years, but will be dissolved, if the losses shall equal half the capital, or if the holders of two-thirds of the shares shall desire it.

The Emperor of Russia has ordered a number of steam-engines of the establishment of Seraing, for vessels to serve on the Volga. Some of them have already been sent off to St. Petersburg.—*Brussels, Tuesday.*

THE GREAT COAL COMPANY OF THE LOIRE, IN FRANCE.

Our readers are aware that, some time ago, the greater part of the separate concessions of coal mines, in the department of the Loire, in France, was united into the hands of one company, under the name of Compagnie Generale des Mines de la Loire. This company possesses 27 concessions in 61; 4744 hectares of extent of coal fields out of a total of 21,000 hectares, which contain a quantity of coal, either actually ascertained, or presumed to exist, of 3,399,602,000 metrical quintals out of a total of 4,883,032,000 metrical quintals—that is to say, about two-thirds of the total quantity of coal contained in the richest and most extensive basin of all France. This virtually made the company a formidable monopolist, and it excited the public alarm to such an extent, that the Government was called on to put down the company as dangerous and illegal. In a debate in the Chamber of Deputies, the Minister of Public Works declared that there was nothing illegal in the company uniting in its own hands such a vast extent of coal field; but he said that if it made an abusive use of its power, either to increase unjustly the price of coal, or to reduce unjustly the wages of the miners, or if it should leave any of the coal pits comprised in its concession unworked, the laws gave the Government the right to interfere, and he pledged himself, that it would interfere for the protection of the public. Since then, the company has been the object of incessant attacks from the inhabitants of the coal districts, the inhabitants and municipal council of St. Etienne, the press of the departments and the capital, &c. At length (it was in December, 1846), the Minister of Public Works formed a commission to inquire into the constitution and working of the company. For the information of this commission, the company caused a document to be drawn, which it calls "Notes and Considerations submitted by the Company to the Commission." As the statements in this document are, in the main, true, and as they give the reader a fair idea of the real question pending between the public on the one hand, and the company on the other, we have thought that we could not do better than make an abstract of it.

The "Notes" of the company begin by stating, that the Compagnie des Mines de la Loire was formed in 1837, after the disasters occasioned by the general inundation of the basin of the Loire. Its object was to unite, in one association, the greater part of the concessions of the coal basin. Experience, it says, has proved that the existence on one point, and in a state of isolation, of a multitude of pits in the hands of different persons, all supplying the same market, and yet under very different conditions, as regarded the production, was a problem, the solution of which could only be the ruin of the persons possessing the pits, the neglect of the workings, meanness in expense, waste of coal, incendiaries, and inundations. But, for eight years, the company was in a languishing state, the amalgamations of concessions which it had effected not being sufficiently numerous to secure its prosperity, the holders of the other concessions not contenting themselves with their fair share of the market. At last, in November, 1845, the company attained the object it desired—two-thirds of the basin were placed under its control. The result of this concentration, it says, was to put an end to the war between the different mines, in leaving, however, a large field open to competition. It saved, it adds, both private and general interests.

The company then goes on to say, that the reason why it has excited so much hostility is, that it put an end to the very profitable business which a crowd of persons contrived to make from the drawing up of deeds of sale, the failures, the loans, the actions at law, the disputes, &c., &c., to which the mines, when in the hands of isolated proprietors, continually gave rise. The amount annually that was expended in this way is estimated at 20,000*l.*

The company proceeds to examine the alleged illegality of its association. It shows, from the law of 1810, which is, as it were, the Magna Charter of mines in France, that the union of several concessions of coal-pits in the hands of one company, or individual, is expressly allowed by the 31st clause, on condition that the working of each shall always be kept in activity. It shows that no objection was felt by the Legislature to such union—inasmuch as, in 1838, it passed a law compelling several persons, holding pits in the Rive-de-Gier basin, to unite them. It shows, also, from a multitude of cases, that Government, the courts of law, the Council of State, &c., have encouraged such associations as it has formed. The Company of the Mines of Blanzy has not only been authorised to hold a larger extent of coal-field than the company, but even not to work all the concessions composing it at the same time. The Company of the Grand' Coombe has also been authorised to unite 12 different concessions; and what is more, the Government advanced it money—6,000,000 fr.—to aid it in its undertakings. From all this, the company concludes, that the perfect legality of its constitution is beyond all question.

[*To be continued in next week's Mining Journal.*]

GENERAL MINING MART AND CLUB HOUSE.

The mining interest which has for centuries held a distinguished place among the productive classes, as representing some of the most important of the staple productions of this country, has now arrived at a position which gives it a consideration equal to any other in the community. London may be said to be the very focus of mining business, in which city the majority of the English mines are represented, and where the system is supported by the largest capitalists in the world. Under these circumstances, it is not a little singular that, while every other large interest has its public institution, where its votaries can meet to transact their business, in mining transactions the only situations for information, discussion, and settlement, are the offices of the several mining sharebrokers. Several attempts have been made to establish what the prospectuses have held out should be a *public* institution of this description; but they have—from what cause we need not stop to inquire—merged into mere private offices. We have now before us another prospectus, in which it is proposed to establish a GENERAL MINING MART AND CLUB HOUSE, in a central situation in London, and accessible to members, who shall be deemed eligible on payment of 4*l.* 4*s.* per annum. The advantages offered in the prospectus are—that every member's letters will be received, and his address always known; have the benefit of public rooms and private boxes for the transaction of business; the "mining" and all the leading journals of the day will be taken in; refreshments will be supplied at little more than cost price; no fees; every facility afforded for communication with the several railway stations, with every accommodation which can possibly be given by such an establishment. We have always considered that an institution of this kind would not only answer well to the proprietors, but also confer a very great benefit on the mining public. But to inspire confidence, and thus insure support, all private and personal matters must be excluded; the owner, or owners, must not be known, only as subscribers, and transact business as other members; and the rooms not allowed to become the mere rendezvous of a certain *clique* of mine proprietors. Under such circumstances, we doubt not, a useful and flourishing concern would soon be established.

MINING ASSURANCE SOCIETY.

A PLAN TO ESTABLISH AN ASSURANCE SOCIETY AMONGST THE MEMBERS OF THE MINING PROFESSION.

The increased charges for annual premiums, as made by a general combination of the existing assurance companies, upon the body of miners, is a subject of such general complaint amongst parties extensively engaged in mining operations, who annually devote much time and capital to the development of the mineral resources of this country, that it is surprising there is not at present a well regulated and economical system of life assurance among the profession. It is universally admitted, that the absence of such an office has entailed innumerable evils, under which the mining interest has hitherto suffered, and which it will continue to depress, until a system be adopted embracing an equitable mode of transacting the business of life assurance.

Although the great interest which attaches to the operations of mining have for a time engrossed our attention, the importance of this subject has not been overlooked. There has been under consideration, during many successive months, the formation of an assurance society, to afford all the advantages which life assurance confers, without the arbitrary imposition of extra premiums.

This proposition is of vast interest to the mining community, which, if successful, will be an epoch in its history. It has been made the subject of anxious deliberation, and the various plans suggested by many of those interested in its success—the miners—have been duly weighed in all their details, objections considered, and improvements adopted; and we now purpose to direct to it the attention of the readers of the *Mining Journal*.

To obviate the evil, the plan is founded upon the following considerations—viz.:

1. As a measure of self-defence, in consequence of existing offices making a considerably higher scale of charges in the annual premiums upon miners, beyond the ordinary risks, than experience has hitherto shown to be necessary.
2. Life offices every where prosper, and pay excellent, and indeed extravagant, dividends upon their capital. As a monetary speculation, the value of this mode of investment has realised a very profitable return, as the large profits of existing establishments sufficiently demonstrate.
3. There is no branch of business which so legitimately falls within the scope and operation of a joint-stock company, and none which can afford so perfectly safe a field for profitable investment of capital.
4. Many distinct classes of society have formed their assurance companies; and almost every separate industrial interest, and every professional class, has now its own life office—depending, in a great degree, upon the aid of their respective members, and especially adapted to the circumstances of those portions which they more immediately represent.

It is remarkable, that the mining capitalist has not sought to avail himself of the large source of profit arising from policies of assurance, while life offices of the metropolis, exceeding 100 in number, and whose engagements may be computed at upwards of 150,000,000*l.* sterling, do not comprise an office exclusively established by the members of the great mining interests of the kingdom. It is obvious, that the opportunity of securing a due share of the profitable nature of the business of life assurance, has but slowly advanced by these important sections of the community, who, of all others, have done the most to promote the extension of trade and commercial enterprise.

The plan about to be submitted to the mining interest, will have for its object the securing to those connected with the profession all the advantages and profits arising from a life assurance business. The mining capitalists annually carry to the assurance offices an incalculable amount of business: it is suggested that they establish an office of their own, conducted by well-known members of their own body; transact their own life assurance business, at the ordinary risk, without excessive premiums, in common with all other classes of professions; avail themselves of their own profits, and those profits would enable them to secure for their families against the consequences of death, instead of being applied to the profits of a strange proprietary.

In pursuance of the plan suggested, it is proposed to form a Mining Assurance Society, for the purpose of life assurance, effecting every kind of assurance, under whatever modification, or contingency, of risk. The novelty and vast advantages of the scheme consists in effecting assurances on invalid and deceased lives—on persons engaged in hazardous and dangerous undertakings at equitable rates of premiums, which existing life offices undertake only upon receiving exorbitant scales of premiums. A large class, therefore, has hitherto been debarred from the application of life assurance, by the operations of most existing assurance companies. This society to be a proprietary office, the capital to be supplied by shares, which is proposed to have a fixed rate of interest, and to be paid off as soon as the funds will permit, if deemed expedient. The profits of the society to apply thus: *four-fifths* to be divided among the assurers—the other portion to the shareholders, together with the business arising from loans, annuities, reversionary interests, &c. Estimating the vast amount of assurances which the mining interests may yearly effect, and which will be in their power to bring to their own office, there is little doubt that in a very few years the profits will provide a handsome bonus to all its members, and the society equal, if not surpass, that of any similar establishment. Every care and attention will be paid to obtain ample security for the interest of assurers that experience can suggest. A competent and responsible directory will immediately be formed from among the members of their own body, and its expenditure limited to the smallest possible amount—the object is only, that the legitimate profits derived from life assurance should be applied to the interests of those connected with mining, and be secured to their own benefit and advantage. It may be remarked, that the great increase which has been recently witnessed in the number of life assurance companies, are sufficient to supply the wants of all classes; but there is no office identified with the interests of the mining capitalist—the plan here suggested will secure to the profession an advantage it has long wanted—viz., the establishment of a "Mining and General Life Assurance Company," to secure to the profession the entire profits of their own business.

This is necessarily but a mere outline of the scheme, the details of which will form the subject of another article, while we shall be glad to learn the opinions, and to enlist the co-operation of the mining capitalist; as we are convinced that an institution of the nature of the one to which we now direct the attention of the mining interests has long been required, and from a careful consideration of the principles and constitution generally, we are persuaded that it is designed to fulfil, in a most complete and secure manner, all the purposes for which it is intended.

AMENDMENT OF THE PATENT LAWS—No. II.

BY F. W. CAMPIN.

Besides being the most expensive of all systems of patent law, that now existing in this country is, in many respects, the least protective, and the most onerous to the inventor and patentee. A serious difficulty presents itself to many inventors at the very outset. It is found that a provision of the law, originally intended for their benefit, is, as far as they are concerned, a fruitful source of inconvenience and evil: this is the plan of granting patents upon titles only, without requiring the deposit of a particular description of the nature of the invention, until a period of *some months* after the date of the patent. Thus, an inventor may obtain a patent without any further description than this:—"Improvements in railway carriages," leaving the nature of such improvements to be guessed at until the time for enrolling the specification thereof has run out. This provision of the law is confessedly for the purpose of allowing the inventor time to experiment with his invention, and make it as perfect as may be in all its details, and to render the specification thereof as full and explicit as possible—so far, it is a benefit to the inventor and patentee. But if railways, propelling, steam-engines, and some other subjects upon which invention is rife, be the object of the intended patent, the benefit of this proviso will sink into insignificance, when compared with the inconvenience that results from it. The inventor finds himself in such cases in this position:—that his patent must be taken out at the risk of proving similar to some of those standing upon the list as granted, but not yet specified; and, worse than that, that it will, when obtained, until these patents are specified out of the way, be of no benefit to him, because the making known the nature of the invention, would subject him to deprivation of it by some one of those previous patentees inserting it in his specification, and claiming it as part of his patent; and, although cases of interference in this way are happily rare, yet the fact that they have ever happened, is sufficient to show that this is no imaginary evil. It may be asked, why cannot this evil be avoided by entering a caveat for some time previous to the application for a patent; or by waiting until the previous patents are specified? In the first case, the answer is, that, except for particular purposes, a caveat is of little avail, unless followed up by an opposition to every patent applied for; and this would usually be too costly to be entertained for a moment; even let this be done, the present routine for passing letters patent would prevent its being an *entirely complete* security. In the second case, patents of the before-mentioned character succeed each other without delay—so that, although the field might be cleared of such as originally occupied it, others would have sprung up in their place.

Notwithstanding the extent of this evil, the remedy is simple and easy enough. Let the caveat, instead of being entered, as now, with title only, merely to obtain notice of *every* application for a patent that approaches the subject indicated by such title, necessarily, without regard to similarity of character, be accompanied, as in the United States, by a secret memorandum specification, detailing, in general terms, the peculiar character of the invention, and deposited with a proper and responsible officer, with which all after applications for patents must be compared; and, if found likely to interfere, the same must be notified to the party entering the caveat, with liberty of opposition, as is now the case. The ordinary caveat, however, to be still open to adoption if preferred. That no application for a patent be hereafter received, unless accompanied by a secret memorandum specification (as now done in cases of opposed patents), to be used as above stated. This memorandum specification to bind the patentee to general principles, but not mere modifications, or details, and to be annexed to *the* specification when enrolled.

Another grievance engendered by the present state of the law, though not so great as the preceding, is still bad enough to call loudly for abolition; it is the practice of dating the patent, not on the day that the inventor makes application for it, but many days subsequent, when the great seal is affixed to the document. This subjects the intending patentee to the fear of losing his patent right in the interim between the application and grant of letters patent, by reason of the invention being published during such period, which would be fatal to its validity. Of course, this seldom occurs; but if the chances of its ever occurring were prevented, much would be gained. This could be effected by making the patent bear date the day of application, though it might not be issued till some weeks after.

The foregoing modifications are all that I can find, after an experience of many years, to be essential—as far as the *routine for obtaining patents* is concerned—to raise our law to a state of practical efficiency sufficient to cope with the intellectual progress of the age—not but there are many antiquated and obsolete forms that appear rather to disfigure, than improve, the system; but as these cannot do any mischief, and their abolition might raise a great commotion in the land, interference will be as well abstained from. Let us but get inventions patented for small annual payments, and protected from the day of application, and *patent antiques* may rest in peace.

But though the system of granting patents, when thus modified, will present a smooth surface for the operations of the intending patentee, he will, when he obtains his patent, find the law relating to sustaining and upholding them very rugged, unless some alterations be made therein, of a character I will point out in my next.

Patent Office, 210 *Strand*, *August* 16.

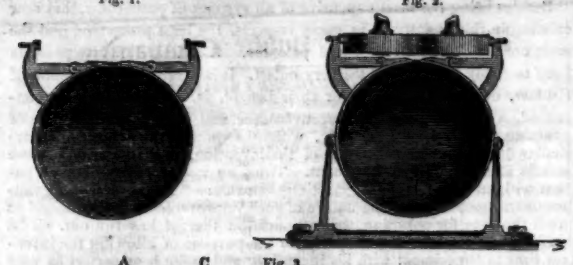
SAFETY APPARATUS FOR ASCENDING AND DESCENDING SHAFTS, &c.—We have seen a model of an apparatus for raising and lowering heavy weights in mines, so constructed that, in the event of the rope or chain breaking, wedges and friction levers are brought into action, by which the descent is immediately and effectually arrested. Guide rods, or plates, are placed on each side of the shaft, extending from top to bottom, and corresponding grooves are fitted in a frame, to which the boxes or corves, which bring up the coal or other materials, are hung. Two powerful bars, working on axes, are placed across the bottom of the frame, and acted on by levers in such manner that, as long as the entire weight is suspended, the whole moves freely in the shaft; but should the rope break, the levers immediately close from the weight upon them; forcing out the bars against the guide plates, and, acting as a wedge, bring the descending body to a dead stop. The frame is floored over, and surrounded with a balustrade for the convenient and safe ascent and descent of the men.

IMPROVED RAILWAY WHISTLE.—Mr. A. Doull, C.E., has taken out letters patent for a new whistle for railway and steam-boat signals, which is very far superior in point of intensity of tone, besides having the advantage of being able to give a variety of notes, on which a code of audible signals can be made, which it will be next to impossible to misunderstand. It consists of a close vessel, or receiver, into which atmospheric air is compressed by air-pumps, to which motion may be given by hand, or by connection being made with any moving parts of the carriage, and disconnected when the air is sufficiently compressed, as shown by a safety-valve attached. The compressed air is allowed to pass through the whistle by the action of a lever, wheel, and axle, or any other known means; and, by having two whistles of widely distinct notes, a large number of different combinations of sounds may be made, from which a most perfect code of signals can be compiled. Air highly compressed gives a far more clear, loud, and distinct tone than steam, or any other elastic vapour.

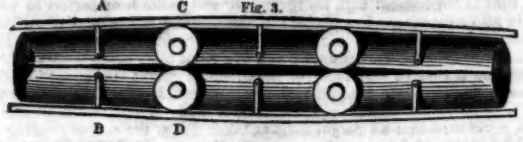
THE USES OF THE ATMOSPHERE.—The uses of the atmosphere are many. It is the medium for regulating the dispersion of watery vapours over the earth. If there was no atmosphere, and that as now the equatorial climes were hot, and the poles cold, evaporation would be continually going on at the equator, and condensation in the colder regions. The sky of the tropical would be perpetually cloudless; whilst in the temperate and arctic zones we should have constant rains and snow. By having a gaseous atmosphere, a more uniform state of things is produced—the vapours evaporated from the earth become ultimately mixed with the air, and are borne by it over large tracts of country, and only precipitated when they enter some stratum of air much colder than that which surrounds them. There are opposite tendencies in an atmosphere of air and an atmosphere of vapour. The air has a tendency from the colder to the warmer parts, and the vapours from the warmer to the colder regions; and as the currents of the air, from the distribution of land and sea—the land, from its low-conducting power, being more quickly heated than the sea—are very complicated—and as some force is employed in keeping the vapours suspended in the air, water is less deposited on the earth than it would have been, had not these tendencies of the air and its hygrometric character rendered it otherwise.

CLARKE AND VARLEY'S ELASTIC ATMOSPHERIC RAILWAY TUBE.

Fig. 1. Fig. 2.



A C Fig. 3.



D D

Fig. 4.

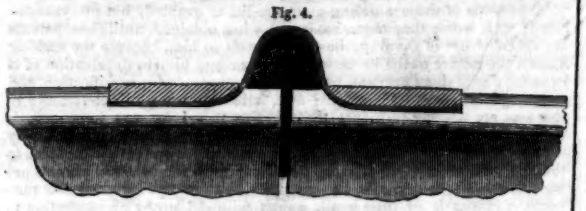


Fig. 5.

REFERENCES TO THE DIAGRAMS.

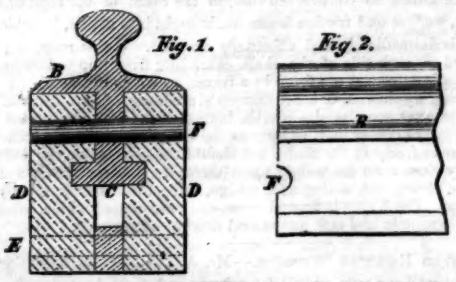
Fig. 1.—Cross vertical section through A B, fig. 3.
Fig. 2.—Cross vertical section through C D, fig. 3.
Fig. 3.—Plan of the tube, showing the position of the rollers in opening the same.
Fig. 4.—Section of the new metallic joint (full size), where the ends of two sections of tube butt together. Fig. 5.—Plan of fig. 4.

The full size experimental line on this principle, at the Poplar station of the London and Blackwall Railway, has now been in daily operation upwards of five months; and having, from the very commencement of the patentees' experiments, taken a great deal of interest in this, what we always considered the only hitherto developed principle on which atmosperic traction could be properly carried out, we have lately paid two or three visits to the line, to ascertain how it had progressed; and we are happy to say, it has more than answered our most sanguine expectations. Having so often described the principle, we have now only to notice its action, and the improvements which have been made. The great superiority of the merely lateral opening and closing of the tube over the longitudinal valve, has been most strikingly displayed; it has not, during the whole period of its working, had one minute's attention bestowed upon it; the tubes remain in the position exactly as first laid down, and the only difference we can notice is, that it works better than ever. During this period we have had great changes of temperature, and intensely hot weather; all, however, has had not the slightest injurious tendency, and, as far as the principle is concerned, it appears to us *perfect*.

There has been some little difficulty with the joints; but the continuous efforts of the patentees have at length overcome this likewise. The joints will now be formed as follows:—The ends of the sections of tube, butting together, as we have on former occasions described, are encircled with a band of copper, rolled with a ridge in the centre (see cut) to allow for expansion and contraction; the two flat sides are bound to the tubes by iron collars, and keyed fast up to the longitudinal opening. The whole is now, therefore, a *perfect metallic* tube, without leather, vulcanised India-rubber, grease, or any other perishable material, continually undergoing change, and requiring constant attention. Nothing in the working of a railway can effect it; time, oxidation, and vibration from passing trains, are alike powerless; subsidence of the sleepers falls harmless on the tube; and, in every case where it is applied, the trains must run with certainty, safety, and economy; and, as to speed, we have no doubt it may safely be carried to a far higher point than the locomotive engine can ever reach. We heartily congratulate the patentees on their (we unhesitatingly say) complete success; for, to our own humble judgment in such matters, it appears that the practicability and vast superiority of atmospheric propulsion is now no longer a question.

IMPROVEMENTS IN RAILWAY CONSTRUCTION.

Fig. 1. Fig. 2.



[Specification of patent granted to Egbert Hedge, No. 9, Howard-street, in the parish of St. Clement's Danes, Middlesex, gentleman, for certain improvements in rails for railroads, and in the manner of securing them.]

This invention consists, first, in a new form and construction of rail; and, secondly, in the mode of securing such rails to their longitudinal sleepers, by imbedding the lower portion of the entire length of each rail in sleepers, grooved to receive such part in the manner exhibited by the drawing in fig. 1, which represents a transverse and vertical section of a rail and sleepers. It will be seen, upon referring to this figure, that the rail is formed with (what the inventor terms) an upper table B and under table (C), and that the shoulders of the upper table rest upon the upper edge of each of the longitudinal timbers (D D), which have grooves formed therein, and extending throughout the entire length of each sleeper, for the purpose of receiving that portion of the rail termed the under table (C), which, when placed therein, is firmly secured in this position, by pins or keys (E) being passed through holes in the sleepers, as shown at fig. 2. At the points of junction of each length of rail, the inventor proposes making the upper table (B) of the rail wider than the other part; and there are "half round" holes (F) formed at the ends of each rail, which, when brought together, form an entire hole, into which a pin or key (G), is passed, the ends resting in holes in the sleepers (D D), as shown. This arrangement, whilst it serves to connect each length of rail together, allows it lateral movement for expansion and contraction. The inventor proposes employing rails of cast-iron, except at those parts of a line of railway where crossings are required, in which cases he proposes to employ wrought-iron rails of the ordinary form, and laid in the usual manner. The inventor claims—firstly, a rail, with an upper and under table and shoulders, as described. Secondly, the clamping of rails in sleepers, grooved and keyed, as described. Thirdly, the combination of rails and sleepers, as described.

Patent Office and Designs Registry, 210, *Strand, August* 19.

A NEW RAILWAY DANGER.—A new addition has been made to the catalogue of railway dangers. On Saturday evening, the 14th inst., while a goods train was going from Edinburgh to Berwick, a stoker, engaged at the top of the funnel, inhaled the sulphuric fumes of the coke, which immediately rendered him insensible, and he fell with violence to the ground, striking the iron frame of the engine in his descent. Medical assistance being obtained, he soon after recovered; but his case may serve as a warning to avoid similar inspirations.

BRETT AND LITTLE'S ELECTRO-TELEGRAPHIC CONVERSER.

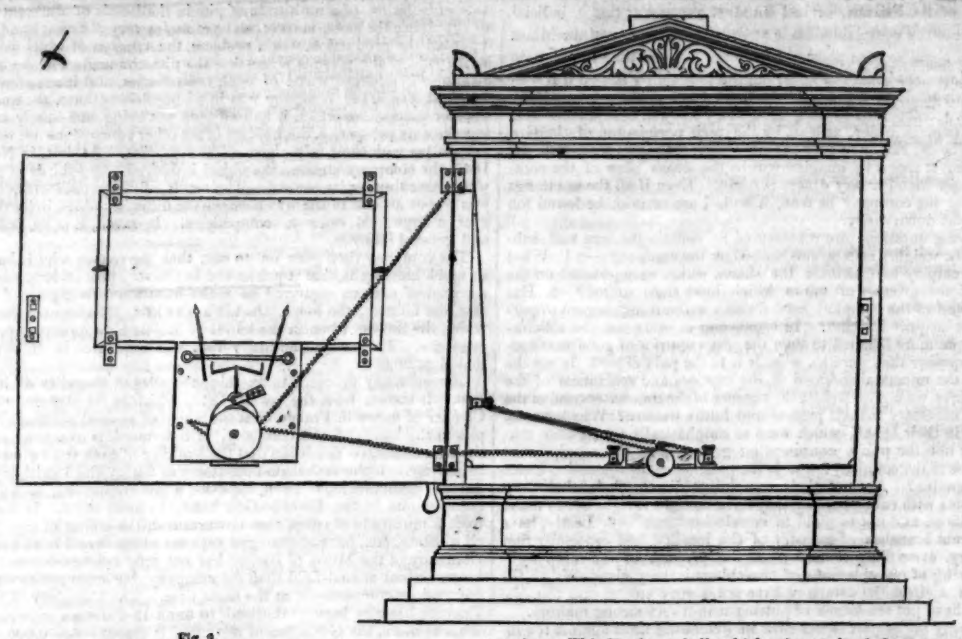


Fig. 2.

The magnificent discoveries which have, of late years, been made in the properties and powers of that extraordinary element—electricity, and the important improvements which have been carried out in its application to telegraphic purposes, has—and it may be called a curious coincidence—kept pace with the development of the railway system; for, without a means of instantaneous communication from station to station, the latter could never have been brought even to its present advanced state, much less to that degree of perfection which it must reach at no distant day, as its defects become palpable, and as the inventive genius of the human mind discovers and applies corrective remedies, rendering what is now complex and uncertain simple and complete. Electricity, applied to telegraphic purposes, is comparatively of modern date; and, during the few years in which its present course has been run, the advance has been extraordinary—improvement has succeeded improvement in rapid succession, until Science herself has been taken by surprise, and wondered where the genius of her sons would stop. Still, in all the telegraphs hitherto in use, there have been objections in detail of a more or less serious description, such as vibration of the needles, imperfect insulation at the supports for the wires along the line, by which a large portion of the fluid finds its way into the earth; the subjection of the wires to the action of atmospheric electricity, by which the machinery becomes deranged and not unfrequently broken and shattered; and various other evils, to which the attention of those connected with the electric telegraph has long been ineffectively directed. It has been left for Messrs. BRETT & LITTLE, of Furnival's-inn, to surmount every difficulty which has yet presented itself; and, while their Electro-Telegraphic Converser is so far free from imperfection, it is in all its details a most simple and easily-understood machine. We shall now endeavour to give as clear and definite a description as our limits will allow, and, in the first place, to begin at the beginning, describe the improvements they have made in the prime mover itself—the battery. In the common battery it is well known that much inconvenience arises from the accumulation of crystals of sulphate of zinc (when sulphuric acid is the exciting liquid) on the plates, which renders that portion of metal useless, and thus the intensity of the current is continually diminishing, and much trouble is occasioned in cleaning the plates. To remedy this defect, BRETT and LITTLE's battery is composed of three troughs, one above another. The top one contains the acid, which falls drop by drop through funnels into the next lower one, which contains the cells and plates of metal—these are filled with sand, which retains just sufficient moisture to keep up the excitement, while the superfluous liquid, charged with the sulphate of zinc formed, falls through funnels filled with sponge (thus acting as a common filter) into the lowest trough, which is merely a small rectangular cistern. By this means a uniform current of electricity is secured, the plates of zinc remaining clean. In insulating the wires at the suspension posts, an ingenious contrivance has been adopted:—A hollow cap of glass is fixed on the top of an iron support, screwed to each upright, the wire passing through a hole in the top. As the cap projects full an inch on all sides from the iron, all conductive connection with the earth is cut off, the water during wet weather falling clear off all around—a striking familiar simile is a flower pot on a stick in a garden for catching earwigs. For the purpose of tightening the wires when required a simple machine is used, which quickly and effectually performs its office, without cutting and rejoining the wires; it consists of a ring of iron, with an opening to pass the wire, and which exactly fits the top of the insulating caps; attached to this is a pulley with a ratchet wheel and spring; a pair of forceps (to which is attached a chain) is fastened to the wire, the chain is then passed over the pulley, which is wound up to the point required, and held in its place while the same operation is performed at four or five posts' distance, when the first machine is removed, taken a like distance in advance, and the operation repeated. The bells are so constructed that they receive but one stroke on each communication; but they are made to vibrate in such manner, that the sound continues a considerable time. There is one wire solely for the purpose of sounding the bells to prevent confusion, and particularly to give effect to the employment of an "accident bell" at every station. This is a large bell, which gives a loud deep tone, and, should an accident happen on any part of the line, the attendant at the nearest station immediately, by a lever, completes the attached electric connection, when the "accident bell" is tolled at every station, and he then immediately proceeds to inform them of its nature and locality. The bell springs require only winding up once every fortnight.

Each station is provided with a deflecting lever, by which the attendant can isolate his station when necessary, but without stopping the connection with the bell through the means before stated; and ingenious measures are adopted for carrying off currents of atmospheric electricity, whether intense or of small power, without, in the least, obstructing the artificial current.

The above diagrams represent the working parts of the system; *fig.* 1 showing the internal arrangements, which are exceedingly simple; and *fig.* 2 the front elevation of the telegraph.

The method of adopting the above admirable and simply-arranged system of alphabetical and digital signs is as follows. It will be seen that the letters of the alphabet are distributed into two vertical columns on the dial, the first or left hand column comprising the letters from A to M; the second or right hand column the letters from N to Z. Between A and N, the first letters of their respective columns, the figure 1 is placed, the meaning of which is, that one motion of the indicator, from its angular position to a vertical one, will signify A or N. If it be the left hand indicator that moves once, the first letter on the left hand column is meant—that is A. On the contrary, if it be the right hand indicator that moves once, the first letter in the right hand column—that is N—is signified. In like manner, between B, the second letter of the left-hand column of letters, and O, the second letter in the right hand column of letters, 2 is inserted, which means, that to indicate B, there must be two motions of the left hand indicator; and to indicate O, there must be two motions of the right hand indicator; and so for the letters C and D, and P and Qu (u being always joined with Q) respectively, there must be three and four motions of the indicator. A different arrangement has been adopted from the letter E, in one column, and the corresponding letter R, in the other column, downwards. From these letters downwards, the figures, like the letters, are distributed into two columns. Opposite to E, stands the figure 1, and opposite to R. stands the figure 1 also. If the letter to be transmitted be E, *one* single, distinct, motion of the left hand indicator (E being in the left hand column of letters) must be *first* made, and the right hand indicator must be then made to move *once*, by reason of its having *fig.* 1 on the right hand column, on the same line with letter E. If, on the contrary, the letter R is to be transmitted, one motion of the right hand indicator (R being in the right hand column of letters) is to be *first* made, and then one by the left hand indicator. Thus, instead of five motions of the left hand indicator being required to indicate the letter E, but two are required, care being taken that the *first* motion is made by the left hand indicator, and the second by the right hand indicator. The remaining letters are indicated in a similar way. To spell the word NO, then, by this invention, we have merely to move the right hand indicator once—that means N. Again, move the same indicator twice; twice it assumes the vertical position, and you have the letter O. NO.

It must be understood that these indicators are not magnetic—they hang on a centre entirely independent of the current; the motion of the handle bringing up a brass T-shaped lever, which, on either right or left-hand indicator being raised, completes the circuit; but, when the pressure is removed, falls by its own gravity into its original position, similar to the dead escapement of a watch, and thus all vibration is prevented—one of the great evils of all the systems hitherto adopted. As a general mode of working on this system, the patentees, by employing three wires, would have occasion for only one battery in London, even for a distance from London to York and back; but they prefer only one working wire, and a battery and earth plate at each station, as by this means any two stations can be conversing together in different parts of the line at the same time, which could not be the case by the other plan.

We shall now conclude, with a concise description of the very elegant and substantial arrangements made by Messrs. BRETT and LITTLE, for the exhibition of this apparatus. The whole is contained in three rooms on the first floor. In the first, you are shown the batteries of different constructions, the series working the telegraph, consisting of 72 pairs of plates; in the second, you see two very beautiful models of dials, one at each end of a table, representing two stations; and here the internal mechanism is fully shown and described, with the very beautiful bell action, &c.; the third room is, however, the *sanctum sanctorum*: here are 17 instruments ranged round two sides of the room, representing 17 stations; between the windows is a magnificent electric clock, set in motion by a small independent battery in the adjoining room; and underneath the dials are 10 coils of insulated copper wire, representing 1000 miles of the large wire on railways, and in a straight line. To explain this we would remark, that it is a well-founded axiom in electric science, that the current is rapid, in proportion to the thickness and uninterrupted position of the wire; and that through a coil of 2500 yards of the finest copper wire made (No. 35), insulated and tightly wound in a coil, the electric fluid has the same difficulty, and takes the same time, in passing, as over 100 miles of wire perhaps one-eighth of an inch in diameter, and 100 miles in length, not coiled, but perfectly unobstructed—hence, the 10 coils are equal to 1000 miles; and through these the current passes before it reaches the dials. In this room the whole beauty and simplicity of the system is seen—the isolating one, four, or more stations; or conversing from No. 1 with Nos. 10, 17, and so on; or giving any general notice to all at once—the difference of the intensity of the action, when the fluid is allowed to pass through one, two, or five of the coils, as compared with the whole 10, it then becoming feeble. In one corner is fitted up the before-described accident bell—the action and importance of which is clearly shown. The whole is a highly interesting and intellectual exhibition, powerfully conveying to the mind a clear perception of the advanced state of science in the present day; the beautiful finish of the mechanism giving ocular demonstration of the proud position of the mechanical arts in this country; and the whole reflecting the highest credit on the inventors and patentees.

NOVEL SPECULATION.—A mercantile house at Berlin has proposed to all the railway companies of Germany to supply all their carriages with silk blinds for nothing. They simply propose to reserve to themselves the right of changing the blinds as often as they please, and they require the companies to engage themselves not to accept, during 50 years, either for money or gratuitously, any blinds but theirs. Their object is to cover the blinds with advertisements.

EXTENSION OF STEAM NAVIGATION.

A LIST OF STEAM VESSELS, NOW CROSSING THE ATLANTIC.

ENGLAND.

CUNARD LINE: from Liverpool to Halifax and Boston.—The Hibernia, Britannia, Caledonia, Acadia, and Cambria.—BUILDING: from Liverpool to New York.—The America, Canada, Niagara, and Europe.

ROYAL MAIL LINE: from Southampton to the West Indies, Mexico, and New Orleans.—The Thames, Great Western, Severn, Teviot, Dee, Medway, Tay, Clyde, Trent, Forth, and Avon.

FRANCE.

FRENCH LINE: from Havre to New York.—The Missouri, New York, Union, and Philadelphia.

AMERICA.

MILLS'S LINE: from New York to Southampton and Bremen.—The Washington, and three building.

COLLINS'S LINE: from New York to Liverpool.—Four building.

GOVERNMENT LINE: from New York to New Orleans.—Four building.

The above vessels average about 1400 *tons.*

The average rate of passage to the United States is about 35*l.* by steam, and 20*l.* by packet.

STEAM TO INDIA AND AUSTRALIA.

A prospectus has just been issued, announcing the formation of the INDIA AND AUSTRALIA ROYAL MAIL STEAM PACKET COMPANY, for the purpose of establishing communications between England and her eastern dependencies. When it is considered that China, India, and New Holland, with the adjacent regions and islands, contain a population numbering more than one-half the entire surface of the globe—that our Indian empire alone contains a population numbering more than one hundred millions of British subjects, whose annual revenue exceeds twenty millions sterling, with a maritime trade of nearly thirty millions—and that our possessions in New Holland, New Zealand, and other settlements in the east, could support as many more, and whose inhabitants are so rapidly on the increase—all must be convinced of the imperative necessity which exists for establishing means of more frequent intercourse than at present exist; more particularly as France has three packets every month from Marseilles, and the Austrians two from Trieste, to Alexandria and Syria; while, with all her interest in, and traffic to, the east, England has only two to Egypt, and but one monthly packet to the East Indies. The following statistics of our Australian settlements—the whole of which are comparatively of modern date—will give some idea of what our whole interests and commerce in the East amounts to:—

	Population.	Revenue.	Imports.	Exports.
New South Wales & Port Philip	181,556	£437,772	£1,616,213	£1,555,986
South Australia	25,000	36,182	184,819	148,459
Van Diemen's Land	58,903	136,983	587,453	582,509
Western Australia	4,700	10,000	25,225	25,000
New Zealand	17,000	25,000	55,018	10,998
Total—(Europeans)	287,159	£615,937	£2,468,728	£2,322,952

ANNUAL VALUE OF THE TOTAL TRADE.

New South Wales and Port Philip	£3,172,199
South Australia	333,278
Van Diemen's Land	1,169,962
Western Australia	50,225
New Zealand	66,016
Total value	£4,791,680

A Charter of Incorporation has been obtained, which limits the responsibility of the shareholders to the amount of their subscriptions; and the following are the advantages which it offers to the company—viz.: "To establish communications to and from the United Kingdom, the East Indies, Australasia, and New Zealand, and such other intermediate ports or places as are thereinafter mentioned—viz., any port or place on the east coast of Africa, between the Isthmus of Suez and Cape Guardafui, the islands of Ceylon and Mauritius, or any other island in the Indian Ocean, any port or place in Asia to the eastward of Aden, and to the westward of Singapore, and any island, port, or place in the Eastern Archipelago, or on the continent of Australia, or in Van Diemen's Land; and also to such other ports or places as may be allowed from time to time by the president of the committee of the Privy Council, appointed for the consideration of all matters relating to trade and plantations, to be indorsed on the said Royal Charter on the application of the company." It also authorises the company to commence business on the line from Ceylon or Singapore (at their option) to Sydney when 125,000*l.*, and on the whole line from England to Australia, when 250,000*l.* is paid up.

IRISH TRANS-ATLANTIC PACKET STATION.

This question, which had been, through the pressure of matters more urgent in connection chiefly with Ireland, put, as it were, in abeyance, pending a course of legislation imperatively demanded by their very urgency, is, as we find, again taken up, and is now put prominently forward, or is rather forced upon the consideration of Government, by the claims of two rival lines of railway, to have a trans-Atlantic packet station in that harbour, which is the most contiguous to the terminus of the respective lines; each company urging the superior advantages for such station of the harbour at its terminus on the south-west coast of Ireland, and of its superior facility and rapidity of communication therefrom, with the metropolis of England, or the seat of Government and commerce. The Valentia Railway Company assert that Valentia Harbour is the most eligible medium of communication between America and the British Islands—"the line of railway from the harbour to Killarney, and thence to Dublin, through Liverpool or Holyhead, to London, presenting the means of a still more rapid communication with the United States that we have at present." The line of railway from Limerick to Dublin is, by its company, professed to be still more rapid of communication with the latter place from the port of Limerick, and, therefore, that port is pointed out by them as the preferable one for the packet station. Both claims are put forth with plausible pretences to a preference each over the other; and a deputation, headed by Earl Powis, and including Messrs. Morgan J. O'Connell and Sidney Herbert, has had recently, as we learn, an interview with Lord John Russell, for the purpose of impressing upon Government the very superior advantages, as the deputation and their constituents deemed them to be, of Valentia Harbour—not alone over Limerick port, but over every other port on the south-west coast of Ireland, for a trans-Atlantic packet station. Now, it will scarcely be necessary to remind the readers of the *Mining Journal* that the great national utility of such packet station on the south-west coast of Ireland, was first urged on the attention of Government and of Parliament in our columns; and that all the advantages derivable therefrom, in a commercial, political, and social point of view, were impartially discussed, and fully demonstrated by us, in the course of our advocacy of the plan, and of its immediate adoption by Government. Valentia was then, as now, pronounced by parties, naturally enough locally interested, as the most eligible, because, as they alleged, the earliest attained, port of the British Islands, by vessels from America—and also because of its facility and safety of access and internal security. Parties interested in like manner, in having a packet station at Limerick, made like pretensions; but we, who were altogether disconnected with local, or even with Irish interests, as dissevered from those of the empire at large, and who duly weighed the evidence of nautical men, as well as that of the naval officers appointed by the Admiralty within the last 25 years, to survey the coasts and harbours of Ireland, were forced by the weight of that evidence to come to the conclusion, that in every requisite for a packet station, both trans-Atlantic and Peninsular, but particularly the former, the port of Berehaven, in the Bay of Bantry, on the western extremity of the county of Cork, had undeniably the preference over Valentia, considerably so over Limerick, and incalculably so over Galway—another candidate port for such station. In the first place, Berehaven, at pretty nearly the mouth of that magnificent Bay of Bantry, is a depth of water, capacity, shelter, security of anchorage, facility and safety of ingress and egress, in all winds and weather, admitted by all naval surveyors to be one of the finest havens in the British dominions. The Dursey Isles, nearly off the bay, are, generally speaking, the first land made by vessels from America; sometimes Cape Clear, some miles farther east of Bantry Bay, is first made by vessels whose destination is up St. George's Channel. It is true the land of Valentia and land farther west of it, is frequently made, but that is the result of unfavourable weather, and not of the navigator's choice, as he will, if possible, keep a course somewhat more southerly, so as to first make either the Dursey Isle, or the Cape Clear, from either of which he takes his course for either Channel, for Liverpool, or for London.

Bantry Bay has also the advantage in the event of the contemplated continuation of the line of railway from Bandon to Bantry being carried, as, doubtless, it will be, into effect, of being, *viâ* Cork and Bristol, the nearest point for a packet station, in respect to shortness of time of communication from such station to London. But the time will be rendered still shorter by some 8 or 12 hours, by the construction of a railway from Padstow (as contemplated) to Exeter, there to join the line to London. That Valentia would be the preferable locality for a trans-Atlantic packet station cannot, as we think, be denied—inasmuch as it possesses advantages in every requisite for it superior to the port of Limerick, although it may be true, that the communication from each by railway to Dublin, is of equal facility, and speed, and shortness of time. We had, as we have observed, examined and discussed, on former occasions, with the utmost impartiality, the relative advantages of the three points—namely, Limerick, Valentia, and Berehaven—for such station, with a firm conviction, that established it must be, at no distant period, at one or the other of them. We had, then, come to the conclusion, that the last-mentioned haven possessed the greater advantages for it, and the correctness of that conclusion we as yet have had no reason to doubt. Still we are open to conviction; but the proof must be paramount to all that nothing has, up to the present period, appeared to convince us that we had come to a wrong conclusion. In respect to the national utility of a trans-Atlantic packet station on the south-west coast of Ireland, in immediate and direct communication with America, there appears to be no controversy; opposition to it can come only from self-interested parties. We cannot pass over a recent admission, or rather proof, of one national advantage that might be derived from it, as referred to in the report just published, of the select committee of the House of Lords, appointed, on Lord Monteagle's motion, to consider the means by which colonisation may be made subsidiary to other measures, for the social condition of Ireland. The committee report favourably on the principle of colonisation, and recommends the "*lessening the time, risk, and cost of trans-Atlantic navigation*, by the transmission of emigrants for America from the best situated western ports of Ireland, and the possible use of steam for such purposes." With this, we close our remarks for the present.

LITERARY NOTICES.

The Engineer's and Contractor's Pocket-Book, for the Years 1847 *and* 1848. John Weale, High Holborn.

In the *Mining Journal* of the 12th Dec. last, we duly noticed the appearance of this useful work, which is a remodelling and improvement of *Templeton's Engineer's Pocket-Book*. Mr. Weale then issued a very large edition, which he considered would have been fully sufficient for the two current years: so well, however, and so deservedly, has the publication been appreciated, that, before the month of July, the stock became exhausted. We have now before us a copy of the second edition, which is got up in the same substantially elegant style, and has received every emendation and addition which could be discovered to be required. Whatever new discoveries, within the province of the work, have been made since the last publication, have been added; and in it the engineer will now find the most ample statistical details in every branch of his most arduous profession.

Inventions, Improvements, and Practice of BENJAMIN THOMPSON, *in the combined character of Colliery Engineer and General Manager, with a short Treatise on the Coal Trade Regulation.* Writtem by Himself. Newcastle: M. and W. M. Lambert.

The volume before us is from the pen of Mr. Benj. Thompson, a deservedly celebrated colliery engineer and owner, and contains a complete detail of his varied experience since 1811—a period of 36 years—in the Newcastle and Durham coal-fields. At that period the only method of shipping coal was by the primitive method of "spouting" them into the ships; that is, tilting them from the waggon down an incline plane, or shoot. He had no sooner become settled as general manager of Bewicke Main, or Urpeth, Colliery, than he turned his attention to an improved method, and erected the first coal crane, by which the loaded coal waggons were lowered on the ship, and, when empty, a counterbalance weight raised it to its place; this led the way to the numerous improvements which have since taken place. The work describes numerous other inventions, with the author's observations, during so many years, of every point in the practice and duties of a coal viewer. Without being in the slightest degree interesting to the general reader, there can be no doubt, but, to the coal trade, more particularly that of the north, it will furnish to all parties officially connected with coal mines a wide field of well-digested information on that subject. The duties of colliery engineer embrace a multifarious amount of general application, with a considerable intermixture of civil engineering; and to the young aspirant, as well as the experienced practitioner, we have no doubt it will prove an admirable text-book.

The Thames, the Shannon, and the St. Lawrence; or, the Good of Great Britain, Ireland, and North America, identified and promoted. By THOMAS BERMINGHAM, Esq. London: Fores, Piccadilly—1847.

Mr. Bermingham has long been before the public as an author, in the philanthropic endeavour to improve the social and domestic welfare and happiness of the population of his native country—Ireland; and, in the present pamphlet, he evidences a deep commiseration with the sufferings which the people have lately endured—a just appreciation of the Government grant—and of having spent much time and attention as to the best means of establishing such a system of things as shall bring about, not only temporary relief, but social comfort and permanent happiness. Supposing it necessary to remove 250,000 holders of small farms, or cottages, in Ireland, he thinks that profitable employment can be found for them upon works of absolute importance at home, and that they should be removed to the United States of British North America gradually, and thus not inundate wild regions with a vast horde at once. This employment would be found in the earthworks for railways, harbours, dredging rivers, draining public and private buildings, a better description of cottage, fisheries, mining, brick and tile making, repairing roads, bridges, and, lastly, the construction of railways, common roads, piers and harbours, improvements in navigation of the great rivers, lakes, canals, &c., in British North America, preparatory to colonization. These great works he calculates to involve an expenditure of 63,500,000*l.* in 10 years, with the most profitable and beneficial results; and, to enable Government to carry out the plan, they should seek powers to raise the necessary capital, by creating a new stock, to be called "The Irish Improvement Stock"—to be in the form of annuity, for 25 years, and at such interest as would induce capitalists to invest therein. Also, that joint-stock companies should be legalised for all such undertakings as are here proposed, strictly limiting the liabilities of shareholders to the amount of their shares. There are about 700 banks in the United Kingdom, besides those of British North America; these, it is thought, might be usefully employed in the issue of the proposed Government debentures, amounting to 123,000*l.* weekly, or about 175*l.* to each bank—a small portion of the savings of the public; and these would be found most convenient investments to those inclined to lay by money. He calculates that 1,000,000*l.*, invested in this, or some other manner which might be decided upon, would employ 12,500 labouring families for a period of two years, in the construction of 200 miles of railroad, and the colonisation of 250,000 acres of land (now wild), in the immediate vicinity of the railroad, by the landlords taking 100,000 shares, of 5*l.* each, and paying a deposit of 1*l.* per share, and 1*l.* instalment every six months—the entire capital being paid up in two years; and, by these means, a great communication through British North America, at all seasons of the year, will be free to the great river St. Lawrence, and 2,000,000 acres of land provided with settlers—opening up an inexhaustable field for emigration from the mother country for ages to come.

The Spelling-Book of Utility. By R. CHAMBERS, F.L.S. Second Edition, greatly enlarged. London: Simpkin and Marshall—1847.

We have great pleasure in noticing a second edition of this juvenile instructor—so different from the generality of the stepping stones to reading, which, instead of being of easy gradation, are of so monotonous a nature, as to disgust the younger mind, rather than making it feel an interest in what it is being taught. In Mr. Chambers's book the lessons are arranged in a familiar, easy, and progressive series, and all contain useful information, calculated to make children *think*: kindness towards each other, and the fulfilment of the laws, are inculcated—and the whole is fully adapted to lead to a love of reading, and a longing for higher instruction.

THE WEAR OF CAST METAL, CASE-HARDENED, CHALDRON-WAGGON WHEELS.—Over the Ouston waggon way (7 miles long), 171,049 chaldrons of coals were conveyed in 6 years, ending with 1821, and 93 tons 7 cwts. 0 qr. 8 lbs. weight of metal were expended in fairly supplying the wear and tear—the wheels being (of course at that period) made from cold-blast iron, and case-hardened. The price of them was on an average 12*s.* per cwt., the old metal being held to be one-third the value of the new. According to which data the cost per chaldron on the whole length of way was 1·04*d.*—and 0·15*d.* per chaldron per mile, or, 0·056*d.* per ton per mile. Coal-waggon wheels, used on locomotive engine lines, are generally made of malleable iron; and very necessary it is they should be so, in order to sustain the severe trials they are put to in their high speeds of travelling—the more especially since the introduction of iron made by the reduction of the ores with highly-heated air, or hot-blast, which has rendered crude iron of so cold-short a nature, that for purposes of tenacity and wear, its value is exceedingly diminished; and for such wheels to move at any of the higher velocities assignable to locomotion, would be attended with the extremest danger. I have not been able to learn what the cost of malleable iron wheels is upon the ton per mile, but the question of charge, in a case with which human life, on so extensive a scale, is intimately connected is inadmissable; although from their greater durability, as a thing of course, it is probable their expense will not be much, if any, more than those of cast-iron, notwithstanding the great cost of their fabrication.—*Thompson's Colliery Inventions and Improvements.*

HORSE-POWER.—The mechanical operations on railroads being generally measured by the (so called) horse-power, it becomes necessary, in the first place, to say something on that subject. The computed horse-power, for mechanical purposes generally adopted by engineers, is the same that the celebrated Mr. Watt laid down as a rule for his own guidance, in reference to his steam-engines. He found that the horses used in, and about, the large breweries and mills of the metropolis, were competent to the following performance, for 8 hours out of the 24—viz.: that their draught was equivalent to the lifting a weight of 150 lbs. out of a well by a rope passing over a pulley, such weight being raised at the animal's natural travelling speed of 220 ft. per second, or 2½ miles an hour—*i. e.*, 150 by 220 = 33,000 lbs., raised 1 ft. high in a minute. Mr. Watt's engines were then beginning to be used, in many instances, instead of those horses, and hence it was that he adopted, as a formula for the measure of his engine-power, that of the animal which it superseded. The colliery waggon horses of Northumberland and Durham, although inferior in size to the London dray-horses, are very little, if at all, inferior to them in a comparison of work performed. I am well satisfied, however, that the railway waggon horses in question, achieve, for a day's duty, a result fully realising Mr. Watt's calculation, and very often—indeed, generally—more.—*Benjamin Thompson.*

MANUFACTURE OF INDIA RUBBER IN BRAZIL.—At 10 o'clock we stopped at an anatto plantation, awaiting the tide, and here we saw the manufacture of rubber. The man of the house returned from the forest about noon, bringing in nearly two gallons of milk, which he had been engaged since daylight collecting from 120 trees that had been tapped upon the previous morning. This quantity of milk, he said, would suffice for 10 pairs of shoes, and when he himself attended to the trees he could collect the same every morning for several months. But his girls could only collect from 70 trees. The seringa trees do not usually grow quickly, and such a number may require the circuit of several miles. In making the shoes two girls are the *artistes*, in a little thatched hut, with no opening but the door. From an inverted water jar, the bottom of which had been broken out for the purpose, issued a column of dense white smoke, from the burning of a species of palm nut, and so filled the hut that we could scarcely see the inmates. The lasts used were made of wood imported from the United States, and were smeared with clay to prevent adhesion. In the leg of each was a long stick serving as a handle. The last was dipped into the milk and immediately held over the smoke, which, without much discolouring, dried the surface at once. It was then redipped, and the process was repeated a dozen times until the shoe was of sufficient thickness, care being taken to give a greater number of coatings to the bottom. The whole operation, from the smearing of the last to placing the finished shoe in the sun, required less than five minutes. The shoe was now of a slightly more yellowish hue than the liquid milk, but in the course of a few hours it became of a reddish brown. After an exposure of 24 hours, it is figured, as we see, upon the imported shoes. This is done by the girls, with small sticks of hard-wood, or the needle-like spines of some of the palms. Stamping has been tried, but without success. The shoe is now cut from the last and is ready for sale, bringing a price of from 10 to 12 vintens or cents per pair. It is a long time before they assume the black hue. Brought to the city, they are assorted, the best being laid aside for exportation as shoes, the others as waste rubbers. The proper designation for this latter, in which are included bottle, sheets, and any other form excepting selected shoes, is *boracha*, and this is shipped in bulk. There are a number of persons in the city who make a business of filling shoes with rice, chaff, and hay, previous to their being packed in boxes. They are generally fashioned into better shape by being stretched upon lasts after they arrive at their final destination. By far the greater part of the rubber exported from Para goes to the United States, the European consumption being comparatively very small.—*Edward's Voyage up the Amazon.*

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY.....General Steam Navigation Company—offices, at Two.
WEDNESDAY...South Wales Railway—Paddington Station, at Eleven for Twelve.
Vale of Neath Railway—offices, at Two.
THURSDAY....Whitehaven and Furness Railway—offices, at One.
Cornwall Railway—Truro, at Twelve.
Northern Counties Railway—London Tavern, at Twelve.
East and West India Docks & Birmingham Junction R'way—offices, Two.
FRIDAY.....Reeth Consolidated Mining Company—offices, Leeds, at Twelve.
North Wales Railway—offices, at One.
Londonderry and Enniskillen Railway—offices, at Twelve.
Direct London and Portsmouth Railway—London Tavern, at One.
SATURDAY....Thames Haven Dock and Railway—Guildhall Coffee-house, at One.
Londonderry and Coleraine Railway—offices, at Twelve.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

UNIVERSAL SALVAGE COMPANY.

The annual meeting of the shareholders in this company was held at the offices, Old Jewry, on Thursday last, the 29th inst.

Viscount INGESTRIE, M.P., in the chair.

The SECRETARY read the advertisement convening the meeting and the directors' report, which stated that the directors had reduced the expenses to the lowest possible ebb; and to recommence operations it would be necessary to raise all the funds they possibly could, by obtaining payment of the outstanding deposits and arrears of calls, and the sale of all the old materials; they had taken all necessary steps for these purposes, but without success. The vessel, named the *Lee*, had not been sold, though offers had been made for her, but much less than she was worth; they had commenced legal proceedings against the defaulters, but unfortunate delays supervened, and the trials could not come on for some months; in the meantime, a bill in equity had been filed by some of the defaulters against the directors. In consequence of this state of things, they saw it was impossible to proceed; and, as the only resource, they had made a declaration of insolvency, preparatory to passing the Court of Bankruptcy. All they wished was, a fair and equitable arrangement, the immediate payment of rent, tradesmen's bills, and the salaries which have been long due, and an indemnity for the security of the directors as to future claims, as they had already agreed to forego very considerable claims for money advanced.

Mr. LUND, in moving the adoption of the report, said, he agreed with the sentiments contained therein, with the exception of the indemnity, which he thought too large—instead of 10,000*l.*, he thought 2000*l.* amply sufficient: he believed the directors were disposed to agree to a much less sum: he moved that the reports be received and adopted, which was seconded by the Hon. Mr. MURRAY; and, on a show of hands, nine were held up for the motion, and none against it: there were about 30 shareholders present.

The CHAIRMAN then moved the re-election of Sir R. Price, Bart, Capt. S. Price, and Mr. Lund, as directors, who went out of office by rotation. On this motion a very considerable discussion ensued.—On Sir R. PRICE observing, that he had joined the direction about 12 months since, in hopes he might assist in getting in the calls, and resuscitating the company, he had sacrificed between 200*l.* and 300*l.*, solely with the hope of doing some good.—Mr. RUCK said, he, too, had sacrificed a large sum of money, and had acted for the good of the company, unlike Sir R. Price, who had done all he could to injure it, by voting for this bankruptcy. They had acted illegally—had refused to receive calls, to make transfers, or even to an inspection by a shareholder of the share register and deed of settlement. He moved an amendment, "that the three directors be requested to retire."—Sir R. PRICE defended himself and colleagues.—Mr. WINTHROP complained, that he was not to be indemnified as a former director.

It appeared from the general discussion, which we cannot give at length, that while in the direction he had, in common with the other directors, advanced 300*l.* to pay off urgent debts, which Mr. Murray had advanced for him and his colleagues, on their signing a bond for 3000*l.*—the whole of which he had been compelled, by Mr. Murray, to repay him that morning: thus was he left to seek his remedy as he could. At a subsequent period, 300*l.* each was again required, which he did not find it convenient to pay; the consequence was, the passing a resolution, that those who did not advance should be requested to retire. He was glad he just escaped borrowing a second 300*l.*, and signing a second bond; and the consequence was, he was virtually turned out of the direction; he could see no reason why he was not as much entitled to indemnity as the present directors.—Much further discussion was entered into, which is uninteresting to the pubic; and, eventually, the three directors were re-elected, and Mr. Payne was re-elected an auditor.—Thanks were then voted to the chairman, and the meeting separated.

TAFF VALE RAILWAY.

The half-yearly meeting was held at the White Lion Hotel, Bristol, on the 18th inst., WALTER COFFIN, Esq. (deputy-chairman) in the chair.

The seal of the company having been put to the registered list of proprietors, the secretary read the report, which was in substance as follows:—It was with satisfaction that the directors were enabled to congratulate the proprietary on an increase of revenue on the preceding half-year of 2775*l.* 12*s.* 9*d.*, notwithstanding an adverse state of trade, produced by the scarcity and high price of provisions. Of the increase, the Aberdare Railway produced 1763*l.* 9*s.* 4*d.*, the gross earnings of that line. The lease of the Aberdare line came into operation on the 1st of January last. It would be observed that a considerable loss on that line has accrued during the half-year, sufficient to countervail any advantage to this company from its own increased revenue. This deficiency induces your directors to recommend that no addition to the depreciation fund be made for this half-year; and that a dividend of 3*l.* 10*s.* for each original share of 126*l.*, be declared, with the proportionate per centage above 5 per cent. on the quarter and 10*l.* shares. The directors expect a large increase of traffic on the Aberdare line, so soon as the resources of coal and iron should be developed; and they trusted that such increase during the present half-year would more nearly assimilate the income and expenditure of that line. The opening of the Ynyscoy Tunnel, a work of considerable difficulty, for the purpose of completing the double line, was progressing satisfactorily, and the directors believed that the double line would be in complete use before the end of the year. On the eastern side of the Bute Docks, the works were approaching completion, the coal-drops and steam ballast cranes being in course of erection. The directors were confirmed in their belief, that the accommodation to the coal trade would be complete, so as to render Cardiff the most convenient port in the British Channel. In addition to those conveniences, the directors had provided a stock of trucks and waggons, ready for affording conveyance to a very large export trade. In compliance with the resolutions of the special general meeting, held on the 31st of March last, the board unanimously requested one of their body, Mr. William Dove Bushell, to become resident director at Cardiff; that gentleman had acceded to the proposal, and was now pursuing the active duties of his engagement. It was with regret the directors had to announce, that since the last half-yearly meeting, the chairman of the company (Sir John Guest) had resigned his seat at the board. The retiring directors were, Messrs. E. H. Lee, T. W. Hill, and C. Bailey, who were eligible for re-election.—The necessary and usual resolutions were then passed unanimously; and the retiring directors having been re-elected, thanks were given to the chairman and directors, and the meeting broke up.

TO THE SHAREHOLDERS OF THE RHYMNEY IRON COMPANY.

GENTLEMEN,—The death of Mr. Rougemont having occasioned a vacancy in the direction of the Rhymney Iron Company, I beg to inform you, that I am a candidate for the office, and request the favour of your support at the annual meeting in November next.

At the suggestion of friends, I some months since intimated to the directors, that it was my intention to come forward, as a candidate, on the first vacancy occasioned by death or resignation; on calling upon the chairman, however, a few days subsequent to the announcement of Mr. Rougemont's decease, I was informed that the board had thought proper (by virtue of the powers given them under the 16th clause of the Deed of Settlement), to offer the vacant seat to another gentleman, whose possession of an office in the City—where he could always be met with during the hours of business—rendered him, in their eyes, a more desirable colleague than myself. It is not for me to question, for a moment, the eligibility of the gentleman selected by them; but, in justice to myself, I think, that, if *this* were their real reason for passing me over, they should, at least, have ascertained whether I was not sufficiently often in the City to fully qualify myself for the requirements of the company: they would, in that case, have found that my business engagements require my presence in town, and in the immediate vicinity of the office, three days in the week, and on other days, that I am invariably to be met with at my offices in Greenwich or Lambeth. It would, I think, also, have been as well, if, instead of forwarding to me, through the secretary, a dry answer—briefly acknowledging the receipt of my letter announcing my intention to come forward—they had intimated to me *then*, that, for the reason above stated, I was deemed ineligible.

Looking at these circumstances, therefore, I cannot but conclude, that, in the course I have felt it my duty to take, in moving for the repeal of the 13th clause of the Deed, which would have regulated the division of our profits by the average of the five preceding years, and in which I was opposed to the majority of the board, I have rendered myself personally objectionable—and for this reason, and this reason only, have been rejected. The confirmation, however, rests with the shareholders; and the spontaneous promises of support I have, within the last few days, received, I consider, fully justify me in announcing my determination to contest the election.

I have been a shareholder in the Rhymney Company since the year 1836—almost from its commencement. I have endured, in common with the other early shareholders, the fearful depreciation to which our property, through the pressure of the times and evil management, has been subjected; and having, as I humbly hope, been, to a certain extent, instrumental in helping to place it on a more prosperous footing, by proposing to the committee of directors and shareholders the plan for the creation of the new shares—a plan that was so warmly responded to by you all, it would, I confess, be to me a subject of infinite gratification, to be placed by you in a situation where I could be of further use.

Should I be honoured with your support, I can only assure you, that my best abilities, such as they are, shall be devoted to promote the interests of the company in which we are both interested; and, if you are favourable to my claims, you would greatly oblige me by an intimation to that effect. I have the honour to be,

Gentlemen, your most obedient servant,

The Palace, Bromley, Kent, August 7, 1847. COLES CHILD.

TO THE SHAREHOLDERS IN THE CORNWALL RAILWAY.

The meeting of this company is on the 26th inst., in Truro. Shareholders, attend on that occasion. You need not to be told that your shares, which have paid 7*l.* 10*s.* and 3*l.* 15*s.* respectively, are now absolutely worthless. You cannot even give them away.—If the directors are to force on a scheme of this kind, your ruin must result. Demand one of three things from the directors—

1. That they shall make these shares marketable, which now they are not; or,
2. That they shall suspend further operations for 6 or 12 months; or,
3. That they shall wind up the concern, and return the unexpended money, if any.

In one word, that they shall either end or mend this scheme.

August 18, 1847. A SUFFERING SHAREHOLDER.

ROCKET PRACTICE.

Considerable interest was excited by the Government trial of Hale's rocket, with that of the Congreve, at Shoebury Ness, on Wednesday, the 18th inst., when a series of experiments were made—140 rockets being fired on the occasion, ranging from a dead level to 30°. Among the Government authorities and scientific gentlemen and officers present, under whose immediate supervision the trial was made, we noticed Capt. Sir T Hastings, storekeeper of the Board of Ordnance; Major-General Sir T. Downman, G.B., K.C.H., commandant of the Woolwich garrison; Major-General W. Smith, Director-General of the Royal Artillery; Col. Chalmers, R.E.; Col. Hardinge, of the select committee; Col. Ingilis, R.E., Capt. Denham, R.N., Commander Jenner, R.N., Major Wilson, R.A., Col. Gilbert, Col. Colquhoun, Capt. Wingfield, and others. The trial occupied full two hours, commencing at about 10 o'clock—there being from 400 to 500 persons present. Mr. Hale was also present, and superintended the firing his rockets.—It may be well to observe, ere we enter upon the results attendant the firing, that Mr. Hale's rocket differs from the Congreve rocket in having no stick; its length, or rather that used on the occasion, being 12 in., and weight 9 lbs.; the Congreve rocket being of equal weight, but 15 in. in length, having attached to it a stick 8 ft. in length, which Hale's rocket renders unnecessary.

Seventy rockets were fired of Mr. Hale's invention, and 70 of the Congreve rockets, alternately, varying in the elevation at which they were placed, as before observed, from 20° to a dead level. The order of firing was five from each, at the several angles of 20°, 15°, 10°, 8°, and 2½°, and point blank. While, we may observe, that the Government rocket had a manifest advantage, in not only accurately determining its angle, as far as our observation went, but not with so much accuracy as might have been the case, had Mr. Hale been more scrupulous in attending to this point; although, it was clear, there was no intention to mislead, but the most perfect fairness and liberality evinced by the Government officers. The point, however, to which we advert, is that of the Government tube being 6 to 7 feet above the sands, while Mr. Hale's were even sunk below the surface, to acquire the necessary angle.

There were six flags fixed, at the distance of 800, 1000, 1200, 1400, 1600, and 1800 yds. At 20° elevation, the service, or Congreve, rockets varied from 1000 to 2200 yards in length of range; while those of Mr. Hale, at the same elevation, ranged from 1600 to 3000 yards. At 15°, those of the Government reached from 450 to 1800 yards—those of Mr. Hale being from 1800 to 2500 yards. At 10° elevation, the extremes of the Government rockets were 150 and 650 yards; whereas those of Mr. Hale were from 400 to 1800 yards. At 8°, the service rocket was from 50 to 500 yards—that of Mr. Hale from 100 to 700 yards. Again, at an elevation of 2½°, several of the Government rockets struck some 50 yards from the stand—those of Mr. Hale, in no case less than 200 yards, *ricocheting* to 1000 yards; while those of the Government rarely passed the first flag, or 500 yards distance. At a dead level, the Government rockets were, in some degree, superior to those of Mr. Hale's, glancing over the sands to upwards of 500 yards, and generally keeping a precise direction.

The rocket of Mr. Hale, from want of a proper stand, or arrangement as to its position, did not, at this level, as appeared to us, go with equal precision, but still continued to outrange the Congreve rocket. Seven or eight of the service rockets broke their sticks on coming into contact with the surface, at a comparatively short distance. The Government rockets were fired from their perfect tube, or stand, which affords every facility for adjusting the elevation and direction. The instruments used by Mr. Hale, being three in number, with the view of testing the several modes which might be applied to firing the rockets, only surprised us in effecting so much—one of these being merely two pieces of board, affixed by way of trough.

It will be observed, that the results were highly favourable to Mr. Hale, and gave evident satisfaction to all present—inasmuch that not only did the majority of the rockets take a longer range, but, in some instances, carried many hundred yards beyond the Congreve rocket, with which it had to contend; while, in five cases, the latter, although at an elevation of 5°, took the ground at from 30 to 60 yards from the point of firing, and there remained. It is right, however, to remark, that, at the close of the experiment, two of Mr. Hale's rockets, fired in a horizontal line, failed. The mode of firing with the Congreve rocket by Lieut. Boxer's tube is well known, while those of Mr. Hale had not only novelty but simplicity to recommend them.

The first 30 rockets were fired from a trough about 10 ft. in length, formed of two sides placed at right angles, the trough being lined with sheet-iron. Another mode, adopted with the view of their application to naval warfare, was by placing the rocket in a machine, which causes it to form three-fourths of a circle, from whence it was projected, the entire space occupied by the machine, or instrument, not exceeding 4 feet by 6 inches. This fully answered the expectations intended.

Another frame from which some of the rockets were fired pleased us, but it was manifest that the first two plans were superior: the trough, we think, might be improved by ranging the sides at different angles; while the instrument from which the rocket is projected, we consider, is open to improvement by extending the tube beyond its point of entry—and thus more nearly approximating to that of the Government as to its length—while it is to be considered that, in the case of Hale's rockets, they have not the advantage of the stick 8 ft. in length, which acts virtually as a rudder in passing through the atmosphere, but which is attended with the inconvenience of carrying 9 ft. 3 in., whereas that of Hale's is only 1 foot. Another point to which the attention of the officers present appeared to be particularly directed, was that of the application of Hale's rockets to naval warfare; the advantages were rendered manifest, by the circular, or carrying, tube, whereby no fire is thrown on the deck of the vessel, and a surface not exceeding 4 feet in length required for firing. It is right to observe, that both the Congreve and Hale's rockets were charged at the Royal Arsenal—hence, there could be no question as to the fairness of the experiment, which, we have no hesitation in saying, was conducted with the strictest impartiality—Mr. Hale taking little or no active part, except attending to his own rockets—while the urbanity and openness of Lieutenant-Chalmers, and Lieutenant-Colonel Hardinge, was acknowledged by all present. It is only due to Capt. Mends and Lieut. Goose, of the coast-guard, to acknowledge their polite attention; as also the services rendered by them and the men under their command—whose ready attention was of great advantage in carrying out the experiment, and gave the highest satisfaction.

THE "GREAT BRITAIN."—There appears to be little chance of rescuing this ill-fated ship from her present perilous position—all previous attempts have failed to realise the expectations of those employed. One other effort, it appears, is to be made on Wednesday next, when the *Birkenhead*, steam frigate, and the *Scorpion*, steam sloop, will, for the last time, attempt to float her.

WEST CORNWALL RAILWAY COMPANY.—In our last Number, we gave a report of the half-yearly meeting of this company, and have received a communication from a correspondent on the subject, in which he observes:—"A Mr. Chanter very properly tried to elicit some information from the directors respecting the unpaid calls, which they declined to give him, and also refused him a sight of the books, that he may not have his suspicions confirmed, that some of the directors were themselves defaulters. This refusal on the part of the chairman is, in my opinion, so unwarrantable, that I cannot refrain from drawing your attention to it, and of expressing a hope, that you will exercise your able pen in administering a proper rebuke through the medium of your Journal. From time to time you have ably advocated the formation of the Devon and Cornwall Central line, for which you deserve the thanks of the Cornish public. I wish the directors of that line would attempt to get possession of the West Cornwall Railway, by buying up the shares, which they can now do at a great depreciation; it would give them such an advantageous position in the county, as would inevitably lead to their obtaining their bill for the Devon and Cornwall Central—the West Cornwall would then form the best paying section of their line. This view of the case you would do well to recommend in your future articles on the subject." We perfectly agree with our correspondent, that the whole of the books of a company ought to be open to every proprietor who has paid his calls, and the refusal on the part of the directors engenders suspicion on the part of the proprietary, and naturally produces mischievous results. As, however, the company are in possession of the Hayle Railway, producing 14,000*l.* a year, and as Mr. Mowatt is to pay immediately 20,000*l.* for the 5000 shares awarded, we trust the directors will be enabled to go-a-head—and think that, under all the circumstances, Mr. Chanter was, perhaps, right in not pressing the matter.

THE WEAR OF CAST-IRON RAILS.—I have had an opportunity of ascertaining, in the case of a railroad over which 200,000 tons weight were conveyed annually, during a period of 18 years (comprising the carriages and their loadings of coals in one direction—viz.: 150,000 tons; and the empty waggons, only, in the other—viz.: 50,000 tons), that the mechanical waste, from attrition, was 1 lb. in every lineal foot of rail (2 lbs. per foot of way), or thereabouts, in the course of the time named, which is 587 lbs. per mile of road, per annum, the rails being cast from cold-blast pig-iron. It may not be generally known, but I believe it to be true, that there is no chemical waste going on with rails in regular use—a certain degree of heat, occasioned by the loads passing over them, preventing oxidation. The wear of hot-blast cast-iron rails will be considerably greater, and by breakage still more; it is, indeed, a very difficult matter to assign to them a competent weight and strength—one-half more metal would, I much doubt, scarcely be sufficient for the purpose. I do not think it has yet been satisfactorily shown what the loss in weight, by wear, of malleable iron rails is, but it cannot fall to be considerably less than those of cast-iron. It is, indeed, a fact well known, and supported by theory, that the more highly iron is wrought, and the purer it is rendered, by being purged of earthy dross in its transmutation from the crystalline to the fibrous state, the stronger and more durable it will be, whether as regards its subjection to the action of fire, to attrition, or mechanical stress—in the character of engine grate bars, waggon-way rails, tye bars, &c.—*Thompson's Colliery Inventions and Improvements.*

REMARKS AS TO THE LOW DUTY ON SMALL COAL.—The reduction of duty on a certain description of small coals shipped overseas, which Act 56 Geo. III. c. 127, provided for, originated in a conversation at one of the Wear coal trade meetings, held at Chester-le-Street, in the year 1815, between Mr. Robinson (the then collector of customs at Sunderland), the late Mr. Thomas Croudace, and myself; when I suggested the increased exportation which would be likely to arise, should such a reduction be allowed; and the benefit which the coal trade would gain by shipping off what was then destroyed—naming the width of the screens between the bars, and the length which occurred to me as being proper for the purpose; and which were, in fact, the dimensions of the screens then, and for some time before, in use at Ouston Colliery. The subject was afterwards generally discussed by the meeting, and the idea was decidedly thought well of; but three-eighths of an inch for the width between the bars was considered too little; as well it might be, half an inch being the most common gauge at that period, and even as wide as five-eighths by no means uncommon; but, then, it must be borne in mind that the screens were very short, and that a large portion of the coals which passed down them did not come in contact with the bars at all; which has been alluded to before, under the head of Coal Screens. Very soon after this, Mr. Robinson, and some others of the party, paid a visit to Ouston Colliery, and were satisfied in regard to the screens. That gentleman opened the subject to the Commissioners of Customs, and a correspondence ensued, which ended in their recommending the matter to the Government, and a bill was brought in, and passed into law, just before the death of George III.—*Ibid.*

SINGULAR MAGNETIC ATTRACTION OF MUD.—Sir A. Mackenzie was the first to notice the attractive power of the mud at the bottom of some of the lakes of North America, which is sometimes so great that boats can with difficulty proceed along the surface. This extraordinary fact is thus stated:—"At the portage or carrying-place of Matress, on Rose Lake, the water is only 3 ft. or 4 ft. deep, and the bottom is muddy. I have often plunged into it a pole 12 ft. long, with as much ease as if I merely plunged it into the water. Nevertheless, this mud has a sort of magnetic effect on the boats, which is such that the paddles can with difficulty urge them on. This effect is not perceptible on the south side of the lake, where the water is deep, but it is more and more sensible as you approach the opposite shore. I have been assured that loaded boats have often been in danger of sinking, and could only be extracted by being towed by lighter boats. As for myself, I had never been in danger of foundering; but I have several times had great difficulty in passing the spot with six stout rowers, whose efforts could scarcely overcome the attraction of the mud. A similar phenomenon is observed on the Lake Sagina, where it is with difficulty that a loaded boat can be made to advance, but fortunately the spot is only 400 yards over." This statement has since received confirmation from Capt. Back and others, during the Arctic land expedition.

MISCELLANEOUS ALLOYS AND COMPOSITIONS.

In the *Mining Journal* of the 31st July, we published a numerous collection of Metallic Alloys; and we now give an additional list, extracted from the new edition of Mr. WEALE'S *Engineer's and Contractor's Pocket-Book*:—

CHINESE WHITE COPPER,—
40·4 parts copper, 31·6 nickel, 25·4 zinc, and 2·6 iron.

GERMAN SILVER,—
1 part nickel, 1 zinc, and 2 copper; when intended for rolling into plates, 25 nickel, 20 zinc, and 60 copper—to which may be added, 3 of lead.

TOMBAC, OR RED BRASS,—
8 parts copper, and 1 part zinc.

MANHEIM GOLD,—
3 parts copper, 1 zinc, and a small quantity of tin.

ALLOY OF THE STANDARD MEASURES USED BY GOVERNMENT,—
576 parts copper, 89 tin, and 48 brass.

BATH METAL,—
32 parts brass, and 9 parts zinc.

SPECULUM METAL,—
6 parts copper, 2 parts tin, and 1 of arsenic; or, 7 of copper, 3 of zinc, and 4 of tin.

HARD SOLDER,—
2 parts copper, and 1 part zinc.

BRITANNIA METAL,—
4 parts of brass, and 4 of tin; when fused, add 4 of bismuth, and 4 of antimony.—This composition is added at discretion to melted tin.

PLUMBER'S SOLDER,—
Equal parts of lead and tin.

TINMAN'S SOLDER,—
2 parts of lead, and 1 part of tin.

PEWTERER'S SOLDER,—
2 parts of tin, and 1 of lead.

COMMON PEWTER,—
4 parts of tin, and 1 of lead.

BEST PEWTER,—
100 parts of tin, and 17 of antimony.

A METAL THAT EXPANDS IN COOLING,—
9 parts of lead, 2 of antimony, and 1 of bismuth.—This metal is very useful in filling small defects in iron castings, &c.

QUEEN'S METAL,—
9 parts of tin, 1 of antimony, 1 of bismuth, and 1 of lead.

MOCK PLATINUM,—
8 parts of brass, and 5 of zinc.

SILVER COIN OF BRITAIN,—
11 1-10th pure silver, and 9 9-10ths copper.

GOLD COIN OF BRITAIN,—
11 parts pure gold, and 1 copper.—Previous to 1826, silver formed part of the alloy of gold coin—hence, the different colour of our gold money.

RING GOLD,—
6 dwts. 12 grs. pure copper, 3 dwts. 16 grs. fine silver, and 1 oz. 5 dwts. pure gold.

MOCK GOLD,—
Fuse together 16 parts of copper, 7 of platinum, and 1 of zinc.—When steel is alloyed with 1-500th part of platinum, or with 1-500th part of silver, it is rendered much harder, more malleable, and better adapted for every kind of cutting instrument.
Note.—In making alloys, care must be taken to have the more infusible metals melted first, and afterwards add the others.

COMPOSITION USED IN WELDING CAST-STEEL,—
Take of borax 10 parts, sal-ammoniac 1 part—grind, or pound, them roughly together, then fuse them in a metal pot, over a clear fire—taking care to continue the heat until all spume has disappeared from the surface. When the liquid appears clear, the composition is ready to be poured out, to cool and concrete; afterwards, being ground to a fine powder, it is ready for use.
To use this composition, the steel to be welded is raised to a heat, which may be expressed by "bright yellow;" it is then dipped among the welding powder, and again placed in the fire, until it attains the same degree of heat as before; it is then ready to be placed under the hammer.

CAST-IRON CEMENT,—
Take of clean borings, or turnings, of cast-iron 16 parts, of sal-ammoniac 2 parts, and flour of sulphur 1 part—mix them well together in a mortar, and keep them dry. When required for use, take 1 part of the mixture, and 20 parts of clean borings—mix thoroughly, and add a sufficient quantity of water.
Note.—A little grindstone-dust added, improves the cement.

BOOTH'S PATENT GREASE FOR RAILWAY AXLES,—
Water 1 gallon, clean tallow 3 lbs., palm oil 6 lbs., common soda ½ lb.; or, tallow 8 lbs., and palm oil 10 lbs. The mixture to be heated to about 210° F., and well stirred, till it cools down to about 70°, when it is ready for use.

CEMENT FOR STEAM-PIPE JOINTS, &c., WITH FACED FLANGES,—
To 2 parts of white-lead mixed, add 1 part red-lead dry—grind, or otherwise mix them, to a consistence of thin putty—apply interposed layers, with one or two thicknesses of canvas, or gauze wire, as the necessity of the case may be.

RAILWAY ACTS.—There has been issued by order of Parliament (dated July 21) an elaborate and curious return of the railways for which Acts were passed in the session of 1846; the length of each line; the proposed capital stock, and the amount of capital subscribed for each; the number of shares that each line is empowered to create; and the sum of money each line is empowered to borrow. This return was prepared (on motion of Mr. Moffatt, 20th April), in continuation of Parliamentray Paper No. 637, of session 1845. It appears, therefrom, that the length of lines authorised by the Acts, passed in the session of last year, was 4618 miles 3 furlongs and 2½ chains. The total amount of capital stock proposed in the said Acts was 90,298,430*l.*; and the amount of capital subscribed, 57,675,690*l.* Beyond this, the companies were empowered under the Acts to borrow a sum of 42,318,938*l.* 6s. 8d. The largest line authorised thereby was the Great Northern, which was proposed to be 275 miles in extent, with an amount of capital stock of 5,600,000*l.* (in 224,000 shares); and the company were further empowered to borrow 1,868,000*l.* The Great North of Scotland Railway was proposed to be 138 miles long; the Northern Counties Union, 127 miles; the Waterford, Wexford, Wicklow, and Dublin, 135 miles; &c. The shortest line proposed by any Act that year was the Shrewsbury, Owestry, and Chester Junction (Extension and Deviation), its length being only nine chains (with a capital stock of 30,000*l.*, and empowered to borrow 10,000*l.* more); 20 other Railway Acts were obtained in the same session, for deviations, amendments of former Acts, alteration of levels, &c.

EXTRAORDINARY CAPABILITIES OF A RAILWAY ENGINE ON THE EASTERN UNION LINE.—On Thursday last, the *Essex* locomotive engine, driven by Phipps, and manufactured by Stothart, Slaughter, and Co., of Bristol, brought from Bury St. Edmund's or Stowmarket, to Ipswich, the amazing number of 149 loaded goods waggons at one time; and when the engine reached the Ipswich station, the other extremity of the line of waggons was close to the bridge on the London road, a distance of nearly a mile! This we believe to be the largest goods train that ever arrived at any station in the kingdom; there was one, we believe, on the Birmingham and Manchester, consisting of 192 empty trucks. On the morning of the same day, the *Essex* took 85 loaded carriages or trucks from Ipswich to Stowmarket, a burden of at least 600 tons, and on the following morning it drew 76 loaded waggons from Ipswich to the same town. Some idea may be formed, from the above statement of facts, of the vast capabilities of good locomotive engines, as well as of the importance of the traffic on the Eastern Union line, which will, doubtless, be greatly increased when the line is extended to Norwich. The commercial transactions of Ipswich are increased to an enormous extent; and, when we consider the great facilities afforded to the trade of this town, by the railway and by water, together with its favoured geographical position, we are justified in expressing a belief, that Ipswich will, ere long, attain to a very important position among the towns in England.—*Ipswich Express.*

THE ATMOSPHERIC RAILWAY SYSTEM.—The South Devon line, from this city to Teignmouth, has this day been worked throughout with the most complete success. The distance from this city to Teignmouth, including stoppages at Starcross and Dawlish, was performed in 42 minutes, with the utmost ease and precision. It is expected that all the transit will be made by the atmospheric in the course of a day or two! So much for the croakers!—*Besley's Exeter News*, of Tuesday.

MOWBRAY'S PATENT RAILWAY WHISTLE.—On Thursday Capt. Simmons, Government Inspector of Railways, examined a third line of rails which has just been laid down upon the London and Brighton and South-Eastern line, between the Bricklayers' Arms Junction, and the Croydon station. This additional line of railway, which will considerably ease the traffic upon the common line of the above companies, has been gained by the conversion of the Croydon Atmospheric Railway into a locomotive line, and is eight miles in length. It is intended to use it for all the down trains out of London, and many delays, which have heretofore been of frequent occurrence, will thereby be prevented. Capt. Simmons was accompanied by Mr. Peter Clark, superintendent of the London and Brighton line, and Mr. Hood, engineer of the line; and after inspecting the alterations in the points and crossings at the New-cross, Forest-hill, and Croydon stations, which have been rendered necessary by the removal of the atmospheric tubes, the inclines, the viaducts, &c., he returned to town by the same special train. Capt. Simmons will make his report to the Commissioners of Railways forthwith, and the line will be opened for traffic, it is expected, in about a week. The Government Inspector of Railways took this opportunity of testing the merits of Mr. Mowbray's chemical railway whistle, an invention designed to supply the desideratum which has hitherto been felt of some efficient means of communication between the guards and the engine-driver of a train. A notice of the first trial of Mr. Mowbray's invention appeared in this Journal last year, when we described the ingenious and inexpensive process by which the whistle was produced by the escape of the gas, generated by the contact of muriatic acid with marble. Since that period the patentee has successfully laboured to perfect his invention, and, among other improvements, he has been enabled to reduce the weight of the vessel to a very convenient and portable size, and to the weight of about 30 lbs. The guard has only to turn a stop-cock, when he wishes to signal the engine-driver, and a shrill whistle is immediately produced, which was distinctly heard upwards of a mile distant, by parties down the line. The new whistle, which was placed on the last carriage of the special train, was distinctly heard by Capt. Simmons and the other gentlemen on the locomotive, on every occasion of its being sounded; and it is to be regretted, that on the return of the special train, when it had to encounter a stiff head wind, and the apparatus was placed upon the last of a long train of trucks, the circumstances being such as to test the efficacy of the invention under the greatest disadvantages, the gas, evolved from a limited quantity of muriatic acid and marble, was all exhausted, from no fault or *mala fides* on the part of the patentee, who had made a too lavish use of the powers of the whistle on the down journey. So many accidents have occurred upon railways from the want of some certain and immediate communication between the guards and the engine-driver, whereby the former may apprise the engine-driver of any accident to the train, that we trust Mr. Mowbray's invention will be found as successful as the experiments of Thursday, so far as they went, were satisfactory. We are glad to hear that Mr. F. Clarke has directed the new whistle to be fairly tried upon the Brighton line, and to be placed under the charge of a trustworthy guard for that purpose.—*Times.*

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